The Mining Journal
RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 700.—Vol. XIX. LONDON, SATURDAY, JANUARY 20, 1849. [Price 6d.

A FREEHOLD ESTATE, in the county of BRECON, containing 200 acres of Arable and Wood Lands, rich Veins of Iron Mine, Fire Clay, &c.

MR. M. WHITTINGTON has been instructed to OFFER FOR SALE, BY AUCTION, at the CASTLE HOTEL, NEATH, on Thursday, February 1, 1849, between Two and Three o'clock in the afternoon, subject to such conditions as shall then be produced, in Two Lots, 1

LOT I.—All that valuable FREEHOLD FARM and LANDS called CEFN-TROS-GOOD, situate in the parish of Ystradveilis, in the county of Brecon, and containing, by estimation, 200 acres of arable and wood land; a substantial-built dwelling-house, with all necessary out-buildings; also, all the IRONSTONE and other MINERALS contained on the property. There is a right of common on the Great Forest of Brecon, for depasturing 300 sheep, 14 ponies, and 25 head of cattle, at the moderate sum of 15d. per annum.

LOT II.—All those rich VEINS of BLUE and YELLOW FIRE-CLAY, situate under Lot I., and known as the celebrated Dynas Fire-Clay, now in the occupation of Mr. Chas. Roger Harris, under a lease for 60 years, 8 of which have expired, at the sleeping rent of £100 per annum, or 16d. per ton royalty. There is a tramroad from the works to the Neath Canal Navigation. The property is delightfully situated in the upper part of the Vale of Neath, within 200 yards of the turnpike-road to Brecon, 1¼ mile of the Neath Canal Navigation, 1 from the Vale of Neath Railway, and midway between Brecon, Neath, and Merthyr.

Further particulars may be had on application to Mr. John Thomas, postmaster, Glyn-Neath, who will get the property shown to parties wishing; or to the auctioneer, Post-office, Neath.

MALLEABLE IRON-WORKS AND PROPERTY FOR SALE, BY PRIVATE BARGAIN.

MALLEABLE IRON-WORKS.—These large WORKS, belonging to the WEST OF SCOTLAND MALLEABLE IRON COMPANY, situated at MOTHERWELL, in the parish of DALZIELL and county of LANARK, consisting of REFINERY FIRES, FORGE, RAIL, ROLLING, SLITTING, HOOP, PLATE, and SHEET MILLS, and, with a little further outlay, capable of producing about 600 tons of finished iron weekly. 2

These works, which have been erected on the most approved plan, have been in operation since May, 1847; and, besides rails, can be made to turn out all the sizes and varieties of iron usually required by the trade.

There are on the ground 1 blowing engine of about, say 60-horse power, for refineries, 2 forge and 2 mill engines, condensing and that work expansively, each about 100-horse power. Between the mill engines there is a small subsidiary high-pressure engine, of about 40-horse power, for driving the guide mills. There are likewise one lathe and one pumping high-pressure engines, each about 20-horse power. All these engines, with one exception, are in first-rate working order.

Attached to the works are smiths', wrights', and fitting-up shops, with turning lathes, cranes, &c., complete. Also, offices, stables, stores, mill manager's house, and 98 workmen's houses, besides ample accommodation in the village of Motherwell immediately adjoining.

These works are most favorably situated, being surrounded by coal and pig-iron works; and, as the Caledonian Railway forms one of the boundaries of the works, railway communication to all parts of the kingdom is afforded; and, besides the existing accommodation, a direct communication with the Harbour of Glasgow, distant 15 miles, will be had on the opening of the Clydesdale Junction Railway, which is now nearly completed.

ESTATES OF BRAIDHURST AND MILTON.

These ESTATES consist of 390 acres or thereby, on which there is an excellent farm steading, with out-houses and cottars' houses sufficient for a large farming establishment. The grounds having been for some years in the hands of the proprietors, are in the best condition.

The lands contain minerals. The coal has been wrought at a moderate depth, for the last 12 months, for the supply of the works, and has been proved to be of excellent quality. The upper seam of coal, 4 feet thick, has been found by bores in several parts of the lands, and is of equal quality; and there is no doubt that all the usual seams of the district run through the property.

The Feu duties exigible from the buildings on the lands, including the village of Motherwell, which amount to about £300 per annum, will be sold with the lands.

These lands, with the minerals and Feu duties, will be sold either apart from, or along with the works.

For further particulars, application may be made to Mr. Lawrence Hill, jun., at the works, at Motherwell; Mr. James Anderson, at the company's office, 88, St. Vincent-street; or Messrs. Moncrieff, Paterson, and Forbes, 45, West George-street, Glasgow, in whose hands are the title deeds of the property.

Glasgow, January 3, 1849.

VALUABLE SLATE QUARRY, in CARNARVONSHIRE.—TO BE LET, for such term, and on such conditions, as may be agreed upon, the RIGHT of WORKING a valuable ROCK of SLATE, on the BLAENY-CWM-FRIDD, in the parish of PENMACHNE, upon which a large sum of money has been expended in driving a level, and in other works. The metal of this rock has been proved to be equal to that of the finest Festiniog Quarries, which lie in the vicinity. The undertaking would suit a joint-stock company or a private speculator, as it can now be brought into early and extensive work, at a comparatively small outlay. 3

For particulars apply to Francis Hallowes, Esq., National Provincial Bank, Dolgelly; and to view the quarries, to Mr. Humphrey Williams, Blaeny-cwm Farm, Penmachne.

EXTENSIVE AND VALUABLE MINERAL PROPERTY AND IRON-WORKS FOR SALE.—TO BE SOLD, BY PRIVATE CONTRACT, THE VENALLT COAL AND IRON-WORKS, 4

Situate on the south side of the RIVER NEATH, GLAMORGANSHIRE, about 8 miles from the port of Neath, and 14 from the port of Swansea, with all the necessary appendages for carrying on the smelting of iron, and an extensive shipping trade of stone coal and stone coal culm.

The property comprises long leases of coal and ironstone, extending over about 3000 acres of land, in a ring fence, which are taken on favourable terms. The coal is anthracite, and three veins, of an aggregate thickness of about 25 feet, are effectually opened by level, for the supply of 400 to 500 tons per day.

The ironstone veins are abundant and rich, and sufficiently opened by level to yield an ample supply for three furnaces. There is also valuable black-band, extending over a large acreage.

The works consist of an engine-house for a pair of engines, one 50-horse high-pressure blowing engine, two blast-furnaces, with all the necessary hot-blast stoves, casting-houses, foundry, finery, &c.

The works and colliery are in operation, and any person who may be desirous of purchasing, will be treated with on liberal terms.

Reports recently made on the property, by Messrs. John Southan, of Bilston, and W. P. Struve, of Swansea, may be seen on application to Messrs. Jevons and Wood, Neath; Messrs. Llewellyn and Randall, solicitors, Neath; or to Messrs. Rowland, Hacon, and Rowland, solicitors, 38, Threadneedle-street, London.

TO BE SOLD, OR LET ON ROYALTY, the DARLASTON GREEN COLLIERY AND IRONSTONE MINES,
In the district of SOUTH STAFFORDSHIRE, now working by the "Galvanised Iron Company." 5

These MINES comprise about 26 acres, held under lease, of which about 23 years are unexpired. They contain all the measures of IRONSTONE usually found in that locality—the excellence of the quality of which is well known, and a small portion of the New Mine Coal, the greater portion of which has been worked. The mines have recently been opened, and drained at a considerable expense, and are now in complete working order. There are a sufficient number of shafts sunk on the estate to get the whole of the mines; and a very trifling outlay will open the measures of ironstone which are not now at work.

The PUMPING and WINDING-ENGINES are perfectly EFFECTIVE, and all the PLANT in EXCELLENT REPAIR. The Birmingham Canal runs into the estate, and there is abundant demand for the produce of these mines at the surrounding iron-works

For further particulars, apply at the office of the Galvanised Iron Company, 3, Mansion-house-place, London; or to Mr. Taylor, King Hill-field, Darlaston.

TO BE SOLD, OR LET ON LEASE (FREEHOLD), the PHŒNIX IRON-WORKS, WEST BROMWICH,
In the district of SOUTH STAFFORDSHIRE, at present carried on by the "Galvanised Iron Company."

These WORKS, which are amongst the most eligible and complete in the district, comprise the following MILLS and FORGES—viz.: 6

1. An ENGINE, of 100-horse power, by Boulton and Watt, in brick engine-house, with two 35-feet boilers, and all the requisite machinery, of the best description, recently erected, driving a forge; a 20-inch BOILER-PLATE TRAIN, and a RAIL MILL—appended to which is a small ENGINE, of 10-horse power, with two PUNCHING and STRAIGHTENING MACHINES for RAILS—complete.

2. An ENGINE, of 60-horse power, by J. and G. Davis, in brick engine-house, with three 25-feet boilers, with powerful machinery, driving a forge; an 18-inch BOILER-PLATE and SHEET MILL; and a 16-inch TRAIN, for the manufacture of Bars, T Iron, and Angle Iron. Attached to this work, is an ENGINE, of 20-horse power, on cast-iron frame, driving a small 8-inch MERCHANT TRAIN, SAW, and TURNING-LATHE.

With these Mills and Forges are 34 PUDDLING and HEATING FURNACES—the whole standing on about two acres of freehold land, bounded by the main road on one side, and by the Birmingham Canal on the other, on which are the necessary wharfages for the use of the works.

The capacity of the works is equal to about 350 to 400 tons of finished iron weekly.

Adjoining the works, on a separate tenure, are a MANAGER'S HOUSE, with about FIVE ACRES of LAND, and FOUR WORKMEN'S HOUSES.

There is an extensive assortment of ROLLS, for the manufacture of the various descriptions of iron for which these works have been long known, and for which there is an extensive and established connection—the whole forming a most complete and valuable establishment for the supply of manufactured iron in all its branches.

For further particulars, apply either at the offices of the Galvanised Iron Company, 3, Mansion-house-place, London; or to Mr. Spencer, on the premises.

STEAM-ENGINES.—From 8 to 20-horse power ENGINES ALWAYS IN STOCK.
Apply to Mr. CAPPER, Engine-Maker and Founder, BIRMINGHAM. 7
Price—£19 to £16; with boiler, £22 per horse.

CHARCOAL ON SALE—ONE POUND PER TON, in large quantities. OGDEN, BROTHERS, Sunderland. 8

CUNNINGHAM AND CARTER'S NEW SYSTEM OF RAILWAY PROPULSION, may BE SEEN in ACTION DAILY, at Messrs. Ingram's, 29, CITY-ROAD, from Twelve to Four o'clock. 9

EXHIBITION OF TELEGRAPHS.—THE GENERAL TELEGRAPH COMPANY INVITE ALL PERSONS INTERESTED in this highly important subject, to INSPECT the splendid SERIES of TELEGRAPHS NOW ON VIEW, at the SOCIETY OF ARTS, ADELPHI.—Tickets for which may be obtained at the company's offices, 9, John-street, Adelphi, or of any Member of the Society. 10

PATENT SAFETY FUSE.—Mr. WILLIAM R. BANT would direct the attention of MINING COMPANIES and OTHERS to the FACT of his OWNING a PATENT for the MANUFACTURE of SAFETY FUSE in Spain, and that he will be happy to attend to any communications which may be addressed to him for the SUPPLY thereof.—No. 74, Calle de San Miguel, Carthagena, Nov. 4, 1848. 11

PORTER'S PATENT CORRUGATED IRON BEAMS, GIRDERS, and FIRE-PROOF FLOORS.—These BEAMS and GIRDERS are about 30 per cent. lighter, and 20 per cent. cheaper, than any others of wrought-iron.—The FIRE-PROOF FLOORS, although not more costly than those of cast-iron, with brick arches and concrete, give greater security from fire, with less than one-tenth of the weight.—MANUFACTORY—IRON ROOFING WORKS, SOUTHWARK.
OFFICE—2, ADELAIDE-PLACE, LONDON-BRIDGE, CITY. 12

RIDER'S RAILWAY BRIDGE.—TO RAILWAY COMPANIES.—This BRIDGE has now been for 18 months in DAILY USE (having a double track) on the HARLEM RAILWAY, in the State of New York, United States. The Erie Railway and the Newhaven Railway Companies have likewise adopted it.
Several other bridges, for ordinary purposes, are also being constructed. 13
The advantages of this over all other iron bridges hitherto invented, consist in the small amount of iron required, compared with the strength obtained, in avoiding the use of any surplus weight of material, in the consequent economy of its construction, and also from its lightness, easy mode of putting together, and facility of transport, in its peculiar adaptation for foreign use.
As regards economy, it can be erected at a cost not exceeding that of a WOODEN BRIDGE, of equal capability.
Applications to be made to Mr. Moulton, the patentee, Bradford, Wilts.

LOCOMOTIVE STEAM-CARRIAGE COMPANY, FOR PASSENGERS AND PARCELS ON TURNPIKE ROADS. 14
PRELIMINARY MEASURES having been TAKEN for CARRYING OUT the above object, all communications are requested to be addressed to Mr. Henry English, Hon. Sec., at the office of the *Mining Journal, Railway and Commercial Gazette*, 26, Fleet-street; or to Mr. F. Herbert, solicitor, 8, Heathcote-street, Mecklenburgh-square.

KENT AND SUSSEX
INDURATED AND IMPERVIOUS STONE COMPANY.
Capital—£20,000, in 2000 shares, of £10 each. 15
[*Provisionally Registered.*]
N.B.—ORDERS EXECUTED FOR PAVING, &c.
Apply for prospectuses, &c., to Mr. William Hutchison, Calverley Quarry, Tunbridge Wells; or to Messrs. Hutchison, Wilford, and Co., East Temple Chambers, 2, Whitefriars-street, Fleet-street, London.

COMBINED VAPOUR ENGINE.—This invention is applied either to a single engine, with two cylinders and pistons, or, as is usual for marine purposes, two distinct engines with a cylinder and piston each. One of the pistons is acted upon by steam, and the other by the vapour of Perchloride, or of any other easily vaporized liquid. The steam is generated (and applied as in the ordinary engine; but, upon its escape from the first cylinder, after having exerted its expansive force therein, it passes into a case, termed a vaporizer, containing a number of small tubes charged with Perchloride, or some easily vaporized liquid, penetrates into the space between, and thus comes into contact with the entire surface of the tubes. Immediately upon the steam coming in contact with the surface of the tubes so charged, a large portion of its caloric is absorbed by the liquid, which is thereby vaporized; and the steam, being deprived of its caloric, becomes immediately condensed, and is then returned into the steam-boiler, or, being by this process perfectly distilled, may be applied for culinary or any other purposes for which pure water is required. The vapour obtained, by the action of the steam upon the liquid in the tubes, is conducted into the second cylinder; and, after exerting its elastic force (which is greater than that of steam) upon the piston, is condensed, and, by means of a force-pump, returned into the vaporizer, which it thus keeps regularly supplied, and is alternately vaporized and condensed. 16
Cards of admission, to view the working of the engine, may be obtained by application to Mr. B. Talbot, at 47, Bedford-row, between the hours of Twelve and Three o'clock.

CWMBRAIN PATENT IRON REFINERY.—The PROPRIETORS of IRON FORGES and MILLS are respectfully INVITED to MAKE TRIAL of Mr. BLEWITT'S REFINED IRON, or METAL, PREPARED by a NEW PATENT PROCESS,
whereby the IRON is completely FREED from the IMPURITIES CONTRACTED in the BLAST-FURNACE, and, by judicious mixtures, rendered applicable to every kind of manufacture. Heretofore, the metal usually sold in the market has been produced from the worst pigs, scraps, and refuse of some particular blast-furnace, or set of furnaces, without any mixture, or any regard to quality, or the purpose for which it might be required. The PATENT METAL is PREPARED ON SYSTEM, and TO ORDER, for any of the following purposes:— 17

1. For BOILER and TANK-PLATES.
2. For TIN-PLATES, commonly called COKE-PLATES.
3. For STRONG CABLE BOLTS, RIVET, and ANGLE IRON.
4. This COMPOUND PUDDLED, beat under the hammer into a bloom, reheated, and rolled into a 6 or 6½-inch bar, makes TOPS and BOTTOMS for FLANCH and OTHER RAILS, of very superior quality, and attended with less waste than any other kind of iron used for that purpose. It is also well adapted for nail-rods, horse-shoes, and for other ordinary uses of the blacksmith.

The PATENT METAL is marked with a squirrel, and the initials "R. J. B.," and is to be had only at the "Cwmbrain Iron-Works," near Newport, Monmouthshire

FOURDRINIER'S PATENT SAFETY APPARATUS, for PREVENTING ACCIDENTS IN MINES AND OTHER PLACES, WHEN THE ROPE OR CHAIN BREAKS. 18
By the ADOPTION of this INVENTION the LIVES of the WORKING MINERS may be PRESERVED, and the PROPERTY of the MINE OWNERS PROTECTED from the serious consequences of either of the following accidents—viz.:
1. From the men, or the load, being precipitated to the bottom of the shaft when the rope or chain breaks: in this case the apparatus is *self-acting*.
2. From either the men, or load, being drawn over the pulley: in this case, also, the apparatus is *self-acting*.
3. From the fearful consequences to men or load of a "whirl," or run: in this case the result is equally *certain*.
A COAL PIT, with the SAFETY APPARATUS ATTACHED to the CAGE, is daily at WORK near BURSLEM, in the STAFFORDSHIRE POTTERIES.
To inspect the apparatus, or to obtain any further information, application may be made o Mr. Edward N. Fourdrinier (the patentee), Cheddleton, near Leek, Staffordshire; or to Mr. Joseph Fourdrinier, 9, College-place, Camden Town, London—who are prepared to GRANT LICENSES for the USE of the PATENT.

GADAIR MINING COMPANY.—At a Special General Meeting of the adventurers, held, pursuant to notice, at the offices, No. 25, Fleet-street, London, on Thursday, the 11th day of January, 1849,
JAMES TRUSCOTT, Esq., in the chair, 19
The notice convening the meeting having been read,—
The Honorary Purser stated, that he was prepared to submit a proposal on the part of Mr. Mackillop, drawn up in accordance with the terms arranged at the previous meeting—whereupon the chairman having suggested that several influential shareholders resident in Manchester had expressed their desire that the meeting should be adjourned for 14 days, it was
Resolved unanimously,—That the meeting do stand adjourned until Thursday, the 25th inst., to meet at the offices of the company, at the hour of Three precisely.
25, Fleet-street, Jan. 12, 1849. HENRY ENGLISH, Hon. Purser.

TINCROFT MINES COMPANY.—At a General Meeting of shareholders, held at the offices, 44, Finsbury-square, London, on Friday, the 19th January, 1849, RICHARD HODGSON, Esq., in the chair, 20
The following resolutions were carried unanimously:—
Resolved,—That the report and accounts now submitted be received, adopted, and entered in the minute book of the company.
Resolved,—That it is the opinion of this meeting, that, after hearing the explanation of the directors, relative to the projected tin smelting establishment, that a preference in the distribution of the shares be given to the shareholders in this mine, to the extent of 3000 shares out of 5000, of which it is understood the company is to be constituted.
Resolved,—That the thanks of this meeting be presented to the chairman and directors, for their able, active, and judicious management of the property of this company, and the elaborate and satisfactory statement which they have furnished to the meeting.

TO MINE OWNERS, AGENTS, AND OTHERS.—GENTLEMEN of influence and connection are required to act as AGENTS for CORNWALL, DEVON, and WALES, and for the PRINCIPAL TOWNS in the MINING DISTRICTS of the United Kingdom.—Address "Miner," care of Editor of the *Mining Journal*, 26, Fleet-street, London.—[All communications forwarded in reply to this advertisement will be answered in a few days.] 21

TO IRONMASTERS.—The ADVERTISER is in WANT of A SITUATION as MANAGER at a FORGE and MILLS. He has been engaged in extensive works in South Staffordshire, and thoroughly understands the manufacture of all descriptions of iron. Satisfactory references given.—Apply to "X. L." at Mr. Cowell's, 75, Worcester-street, Birmingham. 22

PARTNER WANTED,—in an improving and well-known rich MINING DISTRICT in NORTH WALES, by a respectable party, carrying on very valuable COAL-WORKS, which have been recently opened, and are now in active operation, but are capable of very considerable extension, at a moderate further outlay, comprising COAL BEDS under more than 200 acres of land, and with STEAM-ENGINES of from 150 to 200-horse power. The works possess every facility for transit to all parts of the kingdom, by means of a branch railway connected with the collieries; and the new docks at Birkenhead, with the Dee at Chester, afford decided advantages for export trade, as the coals can be forwarded direct from the pits by railway waggons to the vessels. A gentleman taking an active part in the sale department, will be treated with most liberally, and may be secured an ample per centage on his capital, as well as upon all sales he may effect. None need apply who cannot command at least £1600.—References will be required and given.—Apply to "X. Z.," Post-office, Chester. 23
[N.B.—This advertisement will not be repeated.]

WANTED,—A PARTNER, who can advance from £5000 to £6000, to JOIN an ENGINEER and IRONFOUNDER, of equal capital, who is well established in Manchester, doing a profitable business, and wishes to extend it; he may take an active part or not, as he pleases. Satisfactory information will be given as to the present position and future prospects of the business.—Apply to Will. Joynson, solicitor, Manchester. 24

WANTED,—AGENT TO A SMELTING-WORKS.—A YOUNG MAN, of respectable connections, who has had several years experience in the management of lead and silver works, and whose testimonials as to abilities and character are of the first class, and who can give the very best references, wishes to procure a SITUATION AS ABOVE. The advertiser had under his management reverberatory and blast-furnaces, crystallising pots, refining furnaces, rolling and pipe mills, shot tower, &c., in the management of which he acquitted himself with credit. His experiments in the conversion of slag lead proved highly successful. Private affairs caused his resignation of his place some time since. Any party engaging him would find him to have a thorough knowledge of his business and book-keeping, and to pay strict attention to the concern under his care. 25
Letters (pre-paid, stating terms, &c.) addressed to "A. Z." (lead manufacturer), care of the Editor of the *Mining Journal*, No. 26, Fleet-street, London, will meet with prompt attention.—January 8, 1849.

WANTED IMMEDIATELY,—A MACHINE for the DRESSING of SILVER-LEAD ORE.—Apply, with all particulars as to principle and price, to "B. B.," 13, Cecil-street, Strand, London. 26

TO BE SOLD, a PUMPING-ENGINE, 30-inch cylinder, 9 ft. stroke, built by Mr. West, engineer, nearly new—only been worked about three years—no engine ever done better duty when at work: together with a SEVEN-TON BOILER, SPRING BEAM, and first set of rod-shaft attached, for £400. The engine is within a few miles of a good shipping port, being near Liskeard—one good road.—For particulars apply to Capt. Osburn, Liskeard; or Mr. Wm. Rendle, Octagon, Plymouth. 27

EAST BIRCH TOR TIN MINE.—APPLICATIONS for the FEW SHARES in this COMPANY remaining unappropriated, to be made to the secretary, 2, Winchester-buildings. 28

RUNNAFORD COOMBE MINE.—An excellent opportunity is now OFFERED to any person wishing to PURCHASE SHARES in the above valuable concern.—Mr. BROUGHTON has FOR SALE a FEW SHARES, very cheap.
Apply to Mr. Broughton, 30, Taylor's-buildings, Woolwich. 29

MINING OFFICES, THREE KING'S COURT, LOMBARD STREET, LONDON.—Messrs. R. TREDINNICK & CO. beg to draw the attention of capitalists to the DEPRESSED MARKET VALUE of SHARES in ENGLISH and FOREIGN MINES, many of which pay dividends of from 20 to 30 per cent. per annum, whilst those on the eve of so doing are selling at corresponding low prices.—Messrs. T. & Co. continue to DEAL in every description of MINING, RAILWAY, BANKING, INSURANCE, CANAL, and OTHER SHARES.—Statistical information afforded gratuitously, upon personal application.—MONEY ADVANCED upon the above securities. 30

MINING OFFICES, No. 8, GEORGE-YARD, LOMBARD-STREET, LONDON.—Mr. RICHARD THOMAS (who has had 20 years' experience as a mining agent in London) OFFERS his SERVICES in the PURCHASE and SALE of MINE and OTHER SHARES, on commission. Purchases in many valuable mines may now be made at unprecedently low prices. The fullest information given (without charge) relative to mining investments and operations.
N.B.—R. T. has now ON SALE a limited number of SHARES in an undertaking offering unusual advantages, situated in one of the best mining districts in Cornwall. 31
Full particulars will be furnished on application.

MR. THOS. P. THOMAS, MINING AGENT, AND DEALER IN RAILWAY, GAS, BANK, INSURANCE, AND OTHER SHARES.
3, *GEORGE-YARD, LOMBARD-STREET, LONDON.* 32
T. P. THOMAS is a SELLER of SHARES in the leading MINES of Cornwall, Devon, and Wales—paying from 10 to 30 per cent.—Statistical information afforded upon personal application, or by letter.

MR. JAMES STRIDE, MINING, SHARE, AND GENERAL AGENT, 27, SPRING-GARDENS, LONDON, has FOR SALE, SHARES in the BEST DIVIDEND-PAYING and OTHER MINES. 33

MR. GEORGE BATE, JUN., CIVIL ENGINEER AND SURVEYOR, *WOLVERHAMPTON.*
Offices in Queen-street, corner of Piper's-row. 34
N.B.—UNDERGROUND MINING SURVEYS accurately executed.

JAMES LANE, MINING SHARE DEALER,
80, *OLD BROAD-STREET, LONDON.* 35

MONEY.—MESSRS. KILLICK & CO. (late WINSTANLEY, KILLICK, & Co.), SHAREBROKERS, inform their friends and the public, they make IMMEDIATE ADVANCES, to any amount, on the deposit of English and Foreign Railway Shares, Scrip, and Debentures, upon exceedingly advantageous terms: they also BUY and SELL every description of STOCK and MINING SHARES, at much less commission than usually charged.—6, Bank Chambers, opposite Bank of England. 1

BEDFORD UNITED MINES.—DECLARATION OF DIVIDEND.—Notice is hereby given, that a DIVIDEND of FIVE SHILLINGS per share on the shares of these mines, will be PAYABLE at this office on Friday, the 23d December inst., and every succeeding Friday, between the hours of Eleven and Three o'clock, to such shareholders as shall give notice to the secretary personally, or by letter, of their intended application, two clear days before either of the above-named days of payment. By order of the meeting of shareholders, held this day, 37
59, Threadneedle-street, Dec. 14, 1848. G. KIECKHOEFER, Secretary.

CAMERON'S COALBROOK STEAM COAL & SWANSEA AND LOUGHOR RAILWAY COMPANY. 38
(*Registered and Incorporated by 9 and 10 Victoria, cap.* 401.)
Notice is hereby given, that the next ORDINARY MEETING of the shareholders of this company, with reference to the company's railway, will be HELD at the company's offices, 2, Moorgate-street, London, on Wednesday, the 31st day of January inst., at One o'clock in the afternoon precisely.—The transfer books will be closed from the 27th until the 31st inst., both inclusive. By order of the board of directors,
2, Moorgate-street, London, Jan. 12, 1849. A. C. HOWDEN, Secretary.

CONSOLIDATED COPPER MINES OF COBRE ASSOCIATION.—Notice is hereby given, that a HALF-YEARLY GENERAL MEETING of the proprietors of this association will be HELD, in conformity with the Deed of Settlement, at the office of the company, No. 26, Austinfriars, on Tuesday, January 23d instant, at One o'clock precisely. On that day, two directors—viz.: George Probyn and Robert Passenger, Esqrs., and one auditor, Francis Mills, Esq., will go out of office by rotation, but are immediately re-eligible, and are candidates for re-election. It is necessary that parties intending to offer themselves as candidates for the direction and auditorship should leave notice of such their intention with the secretary, at the office of the company, No. 26, Austinfriars, at least 14 clear days before the day of election.
By order of the court of directors. W. LECKIE, Sec. 39
26, Austinfriars, January 3, 1849.

TAMAR SILVER-LEAD MINING COMPANY—TWELFTH DIVIDEND.—Notice is hereby given that a DIVIDEND of TEN PER CENT. has been declared by the directors upon the paid-up capital of this company, PAYABLE on Wednesday, the 7th day of February next, and succeeding Wednesdays, between the hours of Twelve and Four. The certificates are required to be left at the office two clear days in order to be examined and marked.—44, Finsbury-square, London, January 18, 1849. 40

WOOD CARVING BY MACHINERY.

At a recent meeting of the Society of Arts, in the Adelphi, Mr. Jordan, the patentee of this highly-important and interesting process, read a paper on the mode of operation adopted, and also descriptive of some considerable modifications which he had lately effected in carving wood; and also a new arrangement of the machinery by which Caen, Bath, and other free working stones and statuary marble could be operated upon most advantageously in an artistical point of view, and most economically in a pecuniary one. The paper was illustrated by models, diagrams, and some splended specimens of carved work by the machine in wood, Caen stone and marble. The horizontal part of the machine consists of a perfectly level cast-iron bed, or railway, which is fixed to the floor of the workshop; a second cast-iron frame runs on this with flanged wheels, and on this frame a large cast-iron table is made to run by similar wheels, at right angles to the former motion. These two movements in an horizontal plane give the most perfect facility of motion to the upper table, and hence it is called the "floating table." The pattern and pieces of work to be executed are firmly secured to this table, and it is furnished with convenient handles, by which the workman can move it in any required direction. The vertical part of the machine carries the tools for cutting the work, and the tracer for feeling over the pattern. The number of cutters used at one time varies with the size of the work—as many as six are frequently used, and each cutter produces its own copy of the pattern. The cutters are made to revolve at a very high velocity by steam-power; and the operator gradually moves the table, bringing successively every point of the pattern in connection with the tracing point—the cutters following its motions with mathematical precision, until every part has been gone over, and the misshapen block appears a beautiful and perfect *fac simile* of the pattern employed. Up to a very recent period, to obtain a counterpart, or left-handed copy of a right-handed object, Mr. Jordan was obliged to have newly-carved patterns cut by hand, which he found tedious and expensive. He has now completely succeeded in obtaining counterparts, with as much facility as copies. This is effected by having the upper slab divided in two parts, connected by a lever and attachment rods, in such manner that when one moves to the right the other moves to the left, and *vice versâ*; and by placing the pattern on one-half the slab, and the material to be worked on the other, a counterpart, and not a *fac simile*, is obtained; by lengthening, or shortening, the lever between the slabs, the counterpart may be made broader, or narrower, than the pattern, as may be required. The apparatus for carving stone is precisely on the same principle, but acting in a contrary direction to the wood-carving machine, the floating or carrying tables being vertical, and the cutting tools horizontal. The description elicited very great applause, and gave much satisfaction to a numerous audience. The patentee is deserving the highest encouragement, as placing within the reach of the upper and middle class *fac similes* of those noble works of art, which were known to the majority only by reading and hearsay, and which will naturally inculcate a taste for the fine arts, and a spirit of worthy emulation.

THE INDICATOR, OR DYNAMOMETER, FOR STEAM-ENGINES.—This useful instrument, which was originally invented by James Watt, and has been since simplified and improved by Mr. M'Naught, is, perhaps, hardly so universally known and appreciated as it ought to be, and we think we shall be doing our readers good service, by giving them a correct idea of its details and uses. The object of the steam-engine indicator is to enable us to ascertain the actual working condition of an engine, without reference to its nominal power. To do this with certainty, the varying pressures of the steam and the vacuum on the piston of the engine must be correctly registered at every point of its stroke. The indicator consists of a steam-cylinder, about an inch in diameter, containing a piston and piston rod, the upper end of which is encircled by a helical spring. This spring is so graduated, as to allow the piston of the indicator to rise, or fall, an eighth of an inch for every pound pressure per square inch to which it is exposed. An index being attached to the piston-rod and a scale, properly divided, to the outside of the cylinder, it is obvious that we could readily observe the highest, or lowest, pressure on the piston, and the indicator may be thus used, to show the pressure of the steam in a boiler, or the vacuum in a condenser; but to make it register a *varying* pressure, something more is required. By the side of this cylinder is placed a cylindrical paperholder, about 2 inches in diameter, round which the paper, on which the pressure is to be marked, is coiled. To the indicator piston-rod is attached a pencilholder, carrying a pencil, the point of which is pressed by a spring against the paper. The paperholder is carried by a vertical spindle, on which it can turn nearly round, and, by a small pulley and cord, motion is conveyed to it from some part of the steam-engine, which has a motion similar to that of the engine piston, generally from the parallel motion. The indicator is placed either at the top or bottom of the engine cylinder, and connected with the interior of it by a pipe and cock. When this cock is shut, and consequently the steam or vacuum not acting on the indicator piston, the pencil attached to it being stationary, will describe a horizontal line on the moving paper. This line is called the atmospheric line, and is zero upon the scale, as showing only the atmospheric pressure which is then equal on each side of the indicator piston; but when the cock is opened, the piston will be forced up above this line by the pressure of the steam, and below it by the pressure of the atmosphere, and the horizontal motion of the paper, combined with the varying vertical motion of the pencil, will describe a curved line on the paper, the height of which will represent the varying pressures of the steam and the vacuum at every point of the stroke. The mean pressure at a number of points being taken, and the diameter and length of stroke of the cylinder and the number of revolutions per minute being known, we can easily determine the gross amount of power exerted by the engine. From the shape of the curve we can tell whether the valves of the engine are properly set—a point of vital importance, but one very often not sufficiently attended to. An engine, which to the eye and the ear may be in perfect order, will, when tested by the indicator, often show a loss of from 10 or 20 per cent. of power from this cause. Every point of the economy of the engine may be as easily ascertained—the power expended in working different machines, the friction of the machinery when using different oils, and the want of attention to his duty on the part of the engine-driver.

LONDON AND NORTH-WESTERN RAILWAY.—We have just learnt that a very important addition to the comfort and convenience of the travelling public has been suggested by the general manager of the company, Capt. Huish, and is likely to be brought into early operation. Our readers may have observed, that at the principal stations there are bookstalls, where popular literature as well as newspapers can be purchased. The supply of books is about to be increased and improved in character; and the whole of the stations on the line being undertaken by one party (Messrs. Smith and Son, of the Strand), Captain Huish proposes to establish a gigantic circulating library, on the plan that the passenger may select a book at a stall, paying the price thereof, and after travelling any distance on the railway, (where his journey terminates) deliver it at the station, receiving back the value, less a trifle for the perusal. When it is considered that the London and North-Western railway extends over nearly 500 miles, and that more than six millions of passengers travel upon it annually, we cannot conceive any plan more likely to while away a tedious hour, and improve the time necessarily spent in journeying.—*Chronicle.*

COMPENSATION FOR ACCIDENTS ON RAILWAYS.—An important case, under Lord Campbell's Act for compensation under accidents on railways, has just been settled by a jury at Dundee. The action was brought before the Lord Justice Clerk by a Mrs. Cargill, against the Dundee and Perth Railway Company, for damages sustained by the loss of her husband, a farmer, at Hollingside, near Newcastle, and who was killed in consequence of an accident on the line. The damages were laid at 5000*l.*, but a compromise was effected, by which the company undertook to settle an annuity of 75*l.* on the widow for life. The committee appointed by the inhabitants of Cheltenham to distribute the sum of 278*l.*, collected for the relief of the widows and children of the three men killed on the occasion of the accident at Hatherley Bridge, on the Great Western, have awarded to the widows and seven children each of two of the men 75*l.* of this sum; and to the third, with two children, 35*l.*; to the men who were injured and rendered incapable of work they have given similar sums, reserving 123*l.* to be put out at interest for apprenticing the children, or for their future benefit. The railway company subscribed the sum of 50*l.* towards the fund.

LARGE AND IMPORTANT SALE OF CAST-IRON.—Messrs. Hutchison and Dixon, auctioneers, Glasgow, sold at Troon, by auction, about 1200 tons cast-iron. Mr. Dixon explained that the metal consisted of tram, rails, and chairs, which had been used on the Kilmarnock and Troon Railway. The whole was divided into eight parcels, and sold at from 38s. to 41s. per ton. The malleable iron scrape brought 63s. 6d. The attendance of founders and dealers (the former of whom were the buyers) from all parts of the country was numerous. The sale was a quick and most spirited affair, the biddings at the outset being near the prices realised. In addition to the price there falls to be paid 8s. 9d. per ton of carriage to Glasgow, which brings the old iron nearly to the figure at which certain brands of pig are selling here.—*North British Daily Mail.*

IMPROVED RAILWAY SLEEPERS AND CHAIRS.

We have on several occasions noticed the improvements made by Mr. Greaves in railway sleepers and chairs, which is effected by casting both in one mould; the lower part, or sleeper, is of a conical form, with an elliptical base, the chair being cast on the top of the cone; the major axis of the base is 3 feet, and the minor 20 inches, giving an area of about 4 feet. This conical sleeper is well filled with ballast, and inverted in its place, the major axis being at right angles with the rails, when the ballasting outside is well rammed down to the top of the cone, and the whole becomes firm and immoveable. Our contemporary, the *Morning Herald*, some days since, had a communication on this sleeper, in connection with the subject of railways in India, from C. Nicholson, Esq., the superintendent of the Great Indian Peninsular Railway, inclosing a report from Mr. Torkington, a railway contractor of Bury St. Edmonds, on the properties and capabilities of this sleeper and chair. This gentleman, we are informed, is a good authority on such subjects, and being totally unconnected with the patentees, can have no motive, but his sincere conviction of their superiority, in recommending their use. After speaking of the general defects which have been found in the present mode of uniting wood sleepers and iron chairs, he says—"The tendency of the iron pin is to get loose in the wooden sleeper, and of the wooden pin to get loose in the iron chair. Both of these tendencies are obviated by Mr. Greaves's plan, for the chair and sleeper are cast in one piece. Again; it is almost impossible to pack or beat the ballast under the wooden sleeper to an uniform density. In fact, it would require a fine calculation; and to show how a transverse sleeper ought to be packed to fully answer its purpose, it is clear that the ballast ought to be more dense under the rails and each end of the sleeper, than under the centre of the sleeper between the rails. But if it could be theoretically defined, it could not possibly be put into practice. The present method of packing or beating the ballast under the sleeper depends more upon the practice and intelligence of the workman than upon any scientific rules. In Mr. Greaves's iron sleepers the ballast is confined inside the cone, and is made equally dense throughout by beating through the two holes on the top, which can be done by a mere novice, and the whole bearing surface is directly under the rail. The transverse wood road is very liable to get out of line—indeed, it has nothing but its own weight, the friction of the bed of the sleepers upon the ballast, and the few inches of ballast there may be at each end of the sleeper to keep it in line. Hence one of the causes of oscillation we experience when riding in fast trains. With the iron sleeper, the ballast inside the cone unites with the ballast under the cone. I had the iron sleepers we were examining bored to the bottom, and no force which the plate-layers with their ordinary levers could exert upon them could move them one atom, either to the right hand or to the left.

"A road laid upon wooden sleepers will sink, to a greater or less extent, during the time a train is rolling over it, so that the engine has continually to ascend an incline plane, or what is equivalent, to depress the 'coming' rail, until the ballast is of equal density with that immediately under the driving-wheels; this arises from a combination of the causes named above, together with the changes of the atmosphere, and especially during wet weather. The iron sleepers are not so much affected by the weather, because the ballast under them is isolated from the surrounding ballast, and kept dry, and there is plenty of drainage for the whole of the surrounding ballast, without interfering with the ballast immediately under the sleepers, which is not the case with any description of wood roads. In all roads the joint sleepers are usually most out of order; the joint is evidently the weakest part of the rail, and has the least bearing, or support, from the chair, or sleeper—consequently, nearly all the joint sleepers we saw were surrounded with water, and worked up and down during the time the trains were passing over them. This was common to both wood and iron sleeper, but to a much less extent with the iron sleepers. The improvement I suggested in my last letter to you would, I think, remedy the evil. Instead of the above dimensions, I propose to make the joint sleepers cylindrical, and let the diameter be equal to the major axis of the oval sleepers, so that the whole of the sleepers would be in a line as at present; but we should get a larger longitudinal bearing surface. The area would be 3+·7854, equal to 7 square feet; this might be done without increasing the thickness of the metal, as the cylindrical form is stronger than the oval; and I would also increase the breadth of the chairs, and the length of the joint keys, both of which would have a tendency to stiffen and strengthen the joint.

"In conclusion; I consider that, in all cuttings and embankments that are become consolidated, these iron sleepers will ultimately drive out of use the wooden ones, and am convinced that the power and wear of the engine will be economised; the roads will be kept drier and in better repair, and at less cost, with iron than with wood sleepers, and the engines would ascend inclined planes with less slipping and greater ease than on the tranverse sleeper roads; and as to introducing the iron sleepers on your line in India, where it is a question of so much doubt whether wood can be made to answer the purpose of railway sleepers, and resist the attacks of insects, my opinion is most decidedly in favour of the conical iron sleepers; nor do I think that any timber can bear any comparison with them."

NEW RAILWAYS OPENED IN THE PAST YEAR.

ENGLAND.—The aggregate length of new railways opened during the year 1848 was 750 miles, consisting of branches and portions of main lines belonging to the following railways:—Bristol and Exeter, 5 miles; Blackburn, Bolton, and West Yorkshire, 9; Chester and Holyhead, 80; East Anglian, 21: East Lancashire, 20; East Lincolnshire, 48; East and West Yorkshire, 16; Eastern Counties, 30; Eastern Union, 3; Great Northern, 69; Great Western, 31; Lancashire and Yorkshire, 84½; Leeds and Thirsk. 10; Leeds and Dewsbury, 20; Liverpool, Crosby, and Southport, 14; London and Brighton 10; London and South-Western, 24½; London and North-Western, 7; Newmarket, 18; North-Western, 6; Manchester, Sheffield, and Lincolnshire, 57; Midland, 57; North Staffordshire, 29; Shrewsbury and Chester, 28; South Devon, 27; York, Newcastle, and Berwick, 7; York and North-Midland, 24½ miles.

SCOTLAND.—The aggregate length of new railways opened was 299 miles, belonging to the following railways:—Aberdeen 17½; Caledonian, 84; Dumfries and Carlisle, 24; Edinburgh and Glasgow, 9½; Edinburgh and Northern, 40; Glasgow and Ayr, 36½; Glasgow, Barrhead, and Neilston, 8½; North British, 16; Scottish Central, 46; and the Scottish Midland, 33.

IRELAND.—The aggregate length of new railways opened was 158 miles, belonging to the following railways:—Belfast and Ballymena, 38; Belfast and County Down, 4½; Great Southern and Western, 44; Irish South-Eastern, 10¾; Midland Great-Western, 14; Ulster, 11; Waterford and Kilkenny, 11; and Waterford and Limerick, 25.

It would appear, therefore, that the aggregate length of new lines opened for traffic in the United Kingdom during the past year was 1207 miles.

STATISTICAL RETURNS OF FOREIGN RAILWAYS IN 1849.—The following is from the official return of the length of the whole of the railways on the continent:—1. France, 2000 kilometres.—2. Germany, 5392.—3. Belgium, 795.—4. Holland, 260.—5. Denmark, 195; ditto, comprising the duchies of Schleswig and Holstein, 990 kilometres—viz.: 240 open, 16 nearly finished, and 734 kilometres projected.—6. Switzerland, 125.—7. Italy, 260.—8. Hungary, 250.—9. Russia, 180.—10. Poland, 300 = 10,552 kilometres, or 2110 leagues. A great number of branch lines are in course of construction (and projected) throughout the continent; but, from the present unsettled political state of Austria and other parts of the north of Europe and Italy, added to the very great scarcity of money generally in France, and other dominions, railway progress and speculation have, for a time, become at a standstill. For Spain there is only, as yet, a short line from Barcelona; but Portugal, Turkey, &c., are without any whatever.

CALEDONIAN RAILWAY.—It appears that several dissentient shareholders in this company have determined on opposing the contemplated lease of the Scottish Central, the Scottish Midland, and the Dundee and Perth Railways by the directors of the Caledonian Company. A subscription of 1s. per share has been entered into for the purpose of raising a fund to defray the expense of opposing the bills about to be brought into Parliament for saddling the Caledonian Company with the guarantees provisionally entered into by the directors

DUBLIN AND BELFAST.—It is stated that Government have determined on making an advance to the Dublin and Belfast Junction line of 300,000*l.*, the amount necessary to complete it. The ground on which this assistance is to be rendered is, that as the Great Southern and Western of Ireland, the great trunk line to the south, has been accommodated by the Government with the loan of half a million, it would not be dealing impartially to withhold similar assistance to the Dublin and Belfast, which is the great trunk line to the north.

SOUTH-EASTERN.—The trains now run right into the harbour terminus at Folkestone, to the steam-boat station, thus materially accelerating the continental transit. A great swing bridge has been thrown across the quay constructed for this purpose. The company are about to enlarge their station accommodation in this quarter, with the view of making Folkestone their great water terminus.

SOUTH WALES RAILWAY.—The steam-engine for this line is working on it in the vicinity of Pyle, Glamorganshire, in gallant style, greatly surprising the "natives" with the velocity of its movements. The company are supplied with coke and coal by the Galvanised Iron Company, from their works at Cefn Cwse, near Bridgend. The railway company have nearly 20,000 tons of permanent iron rails, in the port of Neath, ready for use as soon as required.

NORTH STAFFORDSHIRE RAILWAY.—At a meeting of manufacturers recently held at Hanley, to consider the best method to be adopted for obtaining a reduction in the rate of tonnage charged on raw material and manufactured goods in their transit along the Trent and Mersey Canal, now vested in the railway company, it was resolved to apply to Parliament, in the ensuing session, to have a clause inserted in the company's Act for that purpose.

Now that Chester has become the centre of so many railways, it is intended to apply to Parliament next session for powers to improve its port and harbour.

Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY	Asiatic—5, New Burlington-street	2 P.M.
	Royal Botanic—Inner Circle, Regent's Park	3½ P.M.
MONDAY	Geographical—3, Waterloo-place	8½ P.M.
	Entomological—17, Old Bond-street	8 P.M.
	British Architects—16, Grosvenor-street	8 P.M.
	Medical—Bolt-court, Fleet-street	8 P.M.
TUESDAY	Medical and Chirurgical—53, Berners-street	8½ P.M.
	Zoological—11, Hanover-square	9 P.M.
WEDNESDAY	Society of Arts—Adelphi	8 P.M.
	Microscopical—21, Regent-street	8 P.M.
	Ethnological—17, Saville-row	8 P.M.
THURSDAY	Royal—Somerset-house	8½ P.M.
	Antiquaries—Somerset-house	8 P.M.
	Royal Society of Literature—St. Martin's-place	4 P.M.
	Numismatic—41, Tavistock-street, Covent-garden	7 P.M.
FRIDAY	Royal Institution—Albemarle-street	8½ P.M.
	Philological—London Library, 12, St. James's-square	8 P.M.
SATURDAY	Westminster Medical—17, Saville-row	8 P.M.

The Poetry of Science.

The second lecture upon this highly interesting subject, delivered at the Western Literary Institution, Leicester-square, by Mr. Robert Hunt, author of the admirable and popular work recently published under the above title, was attended by an unusually large number of the members and their friends.

Mr. HUNT said, that the subject of his last lecture had been the formation of different masses of common stone; and, ascending from those to a higher class of natural phenomena, he intended to proceed that evening to the contemplation of powers which related to life, organic and vegetable. A somewhat ancient and curious proposition—viz.: that stones grow, that plants grow and live, and that animals live and move, had passed into a truism. It was, however, correct only in part; stones grew only in a certain sense: they were formed by the aggregation of particles, and so far might be said to grow; but plants grew in a far superior degree, by converting the elements around them into their own bodies. The plant upon the table—the sickly appearance of which bore ample testimony to the injurious character of the atmosphere of Leicester-square—when placed in the soil, increased in size; and to explain what arrangement of forces was necessary to produce that effect, would form the subject of the discourse of that evening. The elements of vegetable and organic life were chemically the same: they consisted of oxygen, hydrogen, carbon, the metallic oxides, and also nitrogen; and these were each, more or less, essential, as well for the existence of plants as of animals. Nitrogen, for instance, was derived by plants from the earth; animals derived it from vegetables, and man from vegetables, and animals subsisting on vegetable food. The whole presented a chain, in which the links were all complete. They had already seen that the forces which go to the formation of a stone were electricity, heat, chemical action, and sundry other subtle powers of which little was at present known; but it was not less certain, that the same powers were employed in the formation of organic matter, with the addition of that which, for want of a better name, was called the vital force.

Confining the attention of his auditory to one particular, rather than wearying it with reference to many at the same time, the talented lecturer proceeded to describe the formation of plants. In the first instance, a small seed, which consisted of carbon, hydrogen, nitrogen, and oxygen, was placed in the soil. There, at a proper temperature, somewhat above the freezing and below the boiling point, a chemical action took place. The starch in the seed was converted into sugar, and presently a peculiar development took place, as evidenced by the appearance of a breathing arrangement, consisting of two little globes, by which the plants took in the carbon diffused throughout the soil, and gave out oxygen to the air. As the plant progressed, this process, which was indispensable to the formation of the woody matter of the plant, went on: and while the plant thus obtained the carbon necessary for itself, it liberated that oxygen which was equally necessary for the preservation of animal life. There was, however, another remarkable feature in the process. It was necessary that the seed should be placed beneath the soil, or in a shady, moist, warm place, the light of the sun being injurious to germination; and this fact would render it necessary for him to refer to certain physical conditions which belonged to the solar rays. If a sunbeam fell through a prism, a certain order of colours would arise, differing from each other in the intensity of their light. These different portions of the sun's rays were all essential to the production of organic life; but it had been discovered, that the various parts were more applicable to particular portions of the process. In dividing the sun's rays, it must be understood that the colours had nothing to do with the particular properties by which they were accompanied. Thus, the red portion of the ray was the hottest, yet that had nothing to do with the element of heat; and although the greatest chemical action took place under the blue ray, that colour had nothing to do with chemical force. The talented lecturer then exhibited several diagrams, in which the composition of the solar ray, when directed through a triangular prism, was depicted. The lower portion, which was red, contained the maximum amount of heat; the centre, which was yellow, the maximum amount of luminous power; and the upper, or blue end, the maximum of chemical action. It was by thus dividing the solar light, and allowing only the blue rays to fall upon prepared plates, that photographic portraits were taken—the chemical action being sufficient to turn nitrate of silver black. It had been discovered that, by the interposition of coloured media, these different powers could be separated. Blue glass would admit only the chemical; yellow the luminous; and red, the heating power of the solar ray. The process of germination being injured by the luminous power, Nature had provided that seeds should be buried beneath the surface of the soil, at different depths, according to their different peculiarities. If, however, a yellow glass were placed over the soil, the germination of the seed beneath was entirely prevented. On the contrary, if a piece of dark blue glass were placed over the soil, the process of germination became exceedingly rapid; and it was a curious fact that, by this media, seeds might be made to germinate at much greater depths than those at which under ordinary circumstances, they would grow. When he (Mr. Hunt), some eight or nine years ago, made the discovery of this fact, in his anxiety to make it public, he announced the circumstance without thoroughly testing its results. Upon this, Mr. Pellet, the enterprising and scientific glass manufacturer, glassed a cucumber bed with a coloured media, manufactured for the purpose. The result was, an enormous and extraordinary development of stalk, with scarcely any leaves, and no fruit at all. It thus appeared that, after the germination had taken place, the continued application of chemical action became too great for the plant, which was then in the same condition as that in which an animal would be placed if it were made to inhale exclusively pure oxygen gas, instead of the mixture which constituted our atmosphere. Further experiments showed that the luminous power was indispensable for the production of leaves; but, with the blue and yellow media alone, he had never been able to produce flowers and fruit. He then tried the influence of red glass, which permitted the radiation of calorific rays, and the result was satisfactory. The action of three distinct solar agencies was necessary in the formation of a perfect plant. Following out the ideas suggested by these experiments, it was further discovered, that in spring the sun's rays possessed a larger proportion of actinism, or chemical power; that in summer the luminous power predominated; and in autumn, the calorific; while in winter, in which neither the process of germination, the formation of branches and leaves, nor the development and ripening of flowers and fruits, had to be carried on, the three powers were as nearly balanced as possible. This, he considered, was one of the points which deserved to be classed amongst those manifold wonders of Nature which constituted the *poetry of science.*

The talented lecturer then proceeded to discuss the peculiarities which marked the distribution of plants on the surface of the globe, which he illustrated by reference to a large map, on which were laid down the isothermal lines of Humboldt. He differed from the commonly-received notion, that the temperature was the sole influence to which the distribution of plants was to be referred. It had been satisfactorily shown that the sun's rays varied considerably in different parts of the world, and he therefore had good reason to believe that light, heat, actinism, and electricity, had more to do with it than temperature. Indeed, the gigantic vegetation of the tropical, as well as the dwarf firs and reindeer moss of the arctic regions, were clearly dependent upon the balance of the several forces in the solar ray. On this, too, he believed, depended the peculiar character of races, for man and animals were liable to the same influences. The talented lecturer supported this view by a reference to the influences which the breathing of plants and animals had upon the atmosphere. The luxurious vegetation of the tropics, produced large supplies of that nitrogenous princi-

ple which was indispensable to man, while the more thickly populated regions returned ample supplies of carbonic acid for the healthful sustenance of the vegetable kingdom. The existence, therefore, of the vegetable was indispensable to the animal, and the animal to the vegetable.

Mr. Hunt then described, at some length, the interesting experiments which he had undertaken at the request of the Commissioners of Woods and Forests, in order to discover whether it were possible, in the construction of the new palm-house at Kew, to obtain a glass which should intercept a peculiar scorching, or browning action, in the sun's rays which was found to be injurious to the tropical plants in that conservatory. He soon found that a dark green glass would produce the desired effect; but that interfered too much with the luminous and calorific principles, besides giving an unnatural tinge to the fruits and flowers. He, however, eventually discovered that a glass with almost an invisible tinge of green, provided it were made without manganese, was the desideratum required; and he had no doubt that the palm-house at Kew, which had been glazed under his directions, would, in future, have in its lighting nothing which would interfere with a truthful exhibition of the peculiar characteristics of tropical vegetation. After some further remarks upon electricity and electro-culture, Mr. Hunt concluded his interesting lecture, which had been received throughout with warm expressions of approbation, in the following eloquent sentences:—"Prometheus stole fire from heaven to animate mere potter's clay; but our philosophy has shown us that it is the empyrean powers derived from solar sources that support organised forms, and maintain the activity of life. Where the sunbeam penetrates, the joy and gladness of animation is seen; but beyond its influence the stagnancy of death reigns in gloom and silence. The Greek fable was a beautiful shadowing forth of our philosophic truth. Man, in the most early times, has always felt that unseen agencies were behind the curtain of creation, and his fertile fancy gave human forms to the powers which he could not be ignorant were ever active around him. Modern science has drawn a charmed circle, and at her call, the spirits, which our forefathers could not understand, have been subdued to do us service. In the place of the Oread and Dryad, of the Faun or the Satyr, we have now light, heat, and electricity. Mystery still lieth behind them—we know them but by their effects—their causes are yet as inscrutable as was the subtle nature of the wonder-working spirits of antiquity to the intellectual Grecian. The conceit of Pythagoras, that the movement of planets and their position in space was regulated by musical harmony, that Saturn progressed to Doric strains, and Jupiter to Phrygian music, exhibits the efforts of a powerful mind to give form and character to that harmony which it felt and saw in Nature's works, and believed to embrace the universe. In all, and through all, the sage saw a delightful order, and the harmonious vibrations of musical instruments became the type of that law which has since, under other terms, become an established fact to man. Such is the poetry which science reveals; and the philosopher, by studying the truths of science aright, becomes the poet, and translates, for his own enjoyment and the benefit of mankind,

"The tongues in trees,—books in the running brooks,
Sermons in stones,—and good in everything."

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Will you kindly allow me to correct an inexact expression, which occurs in your report of my lecture on the "Poetry of Science," by which your two correspondents have been misled? The stone which I exhibited, containing a *rolled water-worn pebble*, was taken from one of the elvan dykes of Cornwall, and the error arises from my having, being obliged to use popular language, described this elvan as being of a granitic character. The lead lodes of Devon and Cornwall were stated to be, *in general*, at right angles to the main direction of the copper lodes of these counties, and, therefore, adduced as evidence, merely, of the probability that some determinate force, *like* dia-magnetism, regulated these conditions.—ROBERT HUNT: *January* 15.

INSTITUTION OF CIVIL ENGINEERS.

JANUARY 16.—JOSHUA FIELD, Esq. (President), in the chair.

The annual general meeting of this institution was held on Tuesday evening, January 16, when the following gentlemen were elected to form the council for the ensuing year:—J. Field, president; W. Cubit, J. M. Rendel, J. Simpson, and R. Stephenson, M.P., vice-presidents; J. F. Bateman, G. P. Bidder, I. K. Brunel, J. Cubit, J. Fowler, C. H. Gregory, J. Locke, M.P., J. R. Mc Clean, C. May, and J. Miller, members; and W. Harding and T. Piper, associates of council.

The report of the council was read, and from the statement of its financial position the society appeared to be governed by men of foresight, who had very properly restricted the ordinary expenditure within prudential limits, whilst the pressure of the times was felt so heavily by all classes. It, however, held out cheering hopes for the future, for, as it observed, "in a country like Great Britain, whose distinguishing characteristic is energetic and indomitable courage in circumstances of difficulty, it is not probable that any foreign political excitement can long continue to exercise a prejudicial effect; already the horizon is brightening, and a little reflection will demonstrate, that in proportion to the injury arising from the late stagnation, must be the activity on the resumption of the works; and it appears to be acknowledged that the forced economy, which has been practised during the past year, has caused such a necessity for supplies of working stock, and for the improvement of works, that the engineering profession must be generally benefitted on the return of confidence in financial affairs."

Satisfactory reasons were given for the unusual delay in the publication of the Minutes of Proceedings, and a simple but effective plan was detailed for paying off the debt incurred for the alterations of the house of the institution.

Telford metals were presented to the Right Honourable the Earl of Lovelace, Messrs. Harrison, Mitchell, and Ransome; council premiums of books to Messrs. Harrison and Jackson; and Telford premiums of books to Messrs. Redman, Green, and Rankine; the president addressing a few complimentary words to each of these gentlemen on presenting the medals and premiums.

Memoirs were read of the deceased members:—Messrs. B. Cubitt, T. Hopkins, S. Fowls, members; Lieut.-Colonel Brandreth, P. L. Campbell, F. Carleton, and T. E. Steele, associates; and J. Pope, graduate. These contained some very interesting biography, and, as a specimen, we may give that of the late Tom Steele, who was a very old associate of the institution.

"Mr. Thomas Ennis Steele was the descendant of an ancient and honourable family in the County Clare, where he inherited a beautiful estate, and few men have commenced their career with brighter prospects. He graduated and took his degrees at Trinity College, Dublin, about the year 1817; he then removed to Trinity College, Cambridge, in 1820, and obtained the degree of Master of Arts in that University, on the books of which his name was always retained, and he regularly appeared at the elections. He was an elegant classical scholar, but more particularly directed his attention to mathematics, mechanics, and the application of chemistry to the arts; he also, at one period, devoted much of his time to the study of geology, with the avowed object of preparing himself for travelling in the east; a project which was probably prevented by his entanglement in politics. His attention being directed to the bad state of the navigation of the River Shannon, he determined to make a personal survey of the bed of the river, which he did in the most complete manner, employing sometimes very original means; such, for instance, as stepping along the line of a reef or shoal, supporting himself with one hand upon the stern of a boat, whilst he measured and recorded all the inequalities of the surface, and ascertaining the nature of the rock, or ground. An account of this survey was published by him; and no greater proof of its utility can be given, than the fact of the greater portion of his suggestions having been followed in the works that have been since executed. His attention being thus directed to the diving bell, he devised several alterations in its construction and application—particularly a method of lighting the divers, during their submarine labours. All these, with many similar subjects, were published in the current periodicals of the day, and some of them were communicated to this institution. At a later period, a favourite theme upon which he repeatedly addressed the institution, was the purchase of the birth-place of Sir Isaac Newton, and its preservation by the scientific world, in the same manner as Shakespere's house has since been obtained by the exertions of literary and dramatic men. He embarked deeply in Irish politics, and became the devoted follower of O'Connell, about the year 1825; but upon that portion of his career, the incumbrance of his fortune, and the melancholy termination of the life of a man who might have been an invaluable member of society, this memoir cannot dwell. His political opponents, however, all acknowledged his honourable feelings, and the entire absence of selfishness in all his actions; and in his last hours he had the gratification of seeing the bitterest among them vieing with each other in their anxiety to serve honest Tom Steele. He was the most chivalrously minded of men, the most affectionate of friends, and the most devoted of followers, still preserving his independence of mind. He entertained no private resentments which might not instantly be extinguished by the slightest approach to conciliation, even on the part of one who might have deeply injured him; and it may with truth be said, that he never deliberately committed an act by which he thought he should lose a friend, create an enemy, or injure a fellow-creature. After the decease of his chosen leader, Mr. Steele abondoned politics, and though visibly declining in health and spirits, he steadfastly rejected all offers of assistance from his friends, who desired to cheer the evening of his days, and on the 15th of June, 1848, he expired—a man of fallen fortunes, a crushed spirit, and a broken heart, but universally beloved by all who knew and could estimate the man, apart from the politician."

Votes of thanks were passed unanimously to the president, vice-presidents, members, and associates of the council, and to the secretary; and the president, in returning thanks, gave a memoir of the late George Stephenson, and his connection with the combination of the fire tubes and the blast pipe in the locomotive, which constituted it the life of the present railway system. The address was responded to very warmly, and the meeting adjourned until Tuesday, February 6th, when the following paper was announced to be read—"On the Abbattoirs of Paris"—By R. B. Grantham, M. Inst. C. E.

LARGE SCYTHE FACTORY IN AMERICA.—The scythe manufacturing establishment of Reuben B. Dunn, Esq., at North Wane, in Main, is the largest of the kind in the world. The establishment consists, besides warehouses, furnishing shops, &c., of three principle buildings for manufacturing, two of which are 144 feet in length. In these, and in departments connected with the establishment, are employed about 100 men, many of whom have families settled at the place. A flourishing village has grown up within a few years, and is rapidly increasing: 12,000 dozen scythes are annually manufactured, to produce which are required 450,000 lbs. of iron, 75,600 lbs. of steel, 1200 tons of hard coal, 10,000 bushels of charcoal, 100 tons of grindstones, and half a ton of borax. This last article is used in the process of welding. Mr. Dunn is erecting additional works in the vicinity, which will be soon completed, when he will be enabled to turn out 17,000 dozen scythes annually. This establishment is now more than double the extent of any other in the world—none even in England being found to compete with it.—*New York Farmer and Mechanic.*

The first section of the Demerara Railway has just been opened, and the planters are availing themselves largely of the facilities it affords for the transmission of sugar, &c., from their estates.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

MONDAY.....Union Bank of Australia—offices, at One.
TUESDAY.....Consolidated Copper Mines of Cobre Association—offices, at One.
THURSDAY....London and Brighton Railway—Bridge-house Hotel, at One.
FRIDAY.....Australian Agricultural Company—offices, at One.
SATURDAY....Australian Trust Company—offices, at Twelve.

[*The meetings of Mining Companies are inserted among the Mining Intelligence.*]

ST. KATHARINE DOCKS COMPANY.

The annual half yearly general meeting was held, on Thursday, the 18th January, in the dock house, Tower-hill.

T. TOOKE, Esq. (chairman of the dock company), presided.

The SECRETARY read the notice convening the meeting, which had been published in the *Gazette* and usual daily papers. The accounts of receipt and expenditure of the company, for the year ending the 31st December last, which had as usual, and in accordance with the provisions of the Dock Act, been accessible to the proprietors during the preceding 14 days, were laid upon the table. From these it appeared that the general balance in favour of the company, on the 1st of January 1848, was 88,980*l.* 19s. 3d., and that the balance brought forward on the first day of the present year was 92,364*l.* 6s. 10d., showing an increase of 3383*l.* 7s. 7d. That the gross earnings of the company were, during the past year, 235,696*l.* 10s. 5d.; and the expenses (less the charge for interest) 132,549*l.* 10s. 11d., leaving a balance of 103,146*l.* 19s. 6d.; from which, deducting 33,616*l.* 1s. 11d., interest on the present amount of the floating debt (of which 395,750*l.* had been already extinguished, by the operation of the measure of conversion in progress), left a balance, applicable to dividend for the past year, of 72,530*l.* 17s. 7d.; deduct therefrom half-year's dividend, paid in July last, amounting to 35,136*l.* 14s. 9d., left applicable to dividend, in the six months ended December last, 37,394*l.* 2s. 10d.; out of which the directors recommend, that a dividend should be declared of 2 per cent, for the half-year ended 31st December last, and that the property tax thereon be defrayed, as usual, by the company. The dividend would amount to 36,075*l.* 5s. 9d., when there would remain a sum of 1318*l.* 17s. 1d. to be added to the rest, which would increase the amount thereof to 56,289*l.* 1s. 1d.

The CHAIRMAN next proceeded to observe, that in the proposal of a dividend of 2 per cent. for the last half-year, the directors did not apprehend any objection on the part of the proprietors, because it was in accordance with the motives which induced the resolution of the meeting, in January, 1848, to reduce the annual dividend to 4 per cent. per annum, with a view to a gradual restoration to the rest of the sums which had been withdrawn from it in keeping up the former dividend of 5 per cent. per annum; but they were prepared to expect that the propriety of their recommendation of the payment of the income tax on the dividends to be defrayed by the company, would be called in question, as a proprietor (Mr. T. Smith), whose opinions, whenever he had occasion to express them on the state of the affairs of the company, had been received with attention and deference, had intimated his objection to the practice. At the meeting in January, 1848, and again in July last, he (Mr. Smith) urged strongly the discontinuance of such payment; and, on the latter occasion, he gave notice that, at the next meeting of proprietors, which would be held in this month of January, he would bring the subject distinctly before the proprietors. This Mr. Smith would then have the opportunity of doing, upon he (the chairman) submitting the resolution intended to be proposed for approval; but, previously to moving such resolution, the CHAIRMAN begged to state, that the directors had been induced to devote their attention specially to the consideration of the question; and the result of their deliberation had been a unanimous opinion against a departure from the practice heretofore observed—in truth, the point in question was not one of principle, but merely of expedience and convenience. It resolved itself entirely into a question of more or less of dividend. On a dividend of 4 per cent., the income tax of 7d. in 1*l.* was 2s. 4d. Assuming that the profits of the company admitted of dividing out of them among the proprietors 4*l.* 2s. 4d. per cent., and that such dividend were accordingly declared; but leaving the proprietors to pay each his own tax, the result would be, that the proprietors, if they actually received the 4*l.* 2s. 4d., would have to pay over to the tax collector, through the hands of the Dock Company, 2s. 4d.—thus retaining 4*l.* It came, therefore, exactly to the same thing, if the 2s. 4d. was paid by the company, leaving equally the 4*l.* clear to the proprietor.

But, in fact, the company were bound by law, in the first instance, to pay the 2s. 4d. per cent. to the Government; and if the charge was to be borne by the proprietor, it could only be in the way of deduction from his dividend warrant, thus leaving upon the face of it a net sum payable to him of 3*l.* 17s. 8d. If the profits did not afford 4 per cent., plus the income tax, that, doubtless, might be a reason for not dividing so much; but it would still be a question whether it would not be more expedient and convenient, in that case, to reduce the whole dividend, than merely that part of it which went to pay the income tax. In the present instance, the profits of the past year were upwards of 4*l.* per cent., and provided for the payment of the income tax, leaving a surplus to be added to the rest. If, however, the proprietors should require to have the income tax deducted from the declared dividend of 4 per cent., the effect would be that of further adding to the rest a sum of 2104*l.* 7s. 8d., being the amount of the tax of 7d. in 1*l.* on the year's dividend.

In the meantime, the accounts and statistical returns which were before them suggested a few remarks. The gross earnings for the past year amounted to 235,696*l.* 10s. 5d.—an amount considerably below that of the earnings of 1847; but the great excess of importations in 1847, chiefly of provisions, took that year out of the category of ordinary seasons. Taking, therefore, as a fairer point of comparison, 1846, in which trade was in an undisturbed and apparently prosperous state, it appeared that the gross receipts, in 1848, showed an excess of 5881*l.* 15s. 7d. in the gross earnings, as compared with 1846. It was true that there was an excess of charges in 1848, which more than counterbalanced the excess of gross earnings over 1846 by about 2400*l.*; that excess was chiefly [illegible]rable to the following heads:—

[illegible]ages and other items, the increase caused by an excess of landings and deliveries and by the description of several of the articles requiring more operations and labour, making a total of 2933*l.* On the other hand, there was in the receipts for 1846 an amount of 2600*l.* for rent in Irongate Wharf, while, in consequence of the conflagration, no rent had been received in 1848; but, as with the sum received for the fire insurance, the wharf and warehouses were being rebuilt, and a lease since granted, rent would be receivable in 1849. The view would, perhaps, be still more favourable, if rejecting 1847 as altogether exceptional, they compared the statistical returns of landings in 1846 and 1848:—Landed in 1848, 122,558 tons; ditto in 1846, 117,925 ditto—excess in 1848, 4633 tons. As the landings form, upon the whole, the best criterion of the quality of business resorting to these docks, it might be satisfactory to state the amount of them for each of the last seven years:—1842, 106,370 tons; 1843, 106,726 ditto; 1844, 101,355 ditto; 1845, 111,917 ditto; 1846, 117,925 ditto; 1847, 157,720 ditto; 1848, 122,558 ditto.

It would hence be seen that, with the exception of 1844, when in consequence of a long prevalence of easterly winds, and an obstruction of the navigation by ice, there were hardly any arrivals in December of that year, and with the further exception of 1847, when the arrivals were monstrously swelled by accidental circumstances, there had been a steady increase of the quantity of goods landed in the docks.

In addressing them at this period of last year, he (the chairman) took occasion to notice the depressed state and gloomy prospects of trade, and soon afterwards the revolutions that broke out on the continent of Europe were added to the other causes of the disturbed and distressed state of the commerce of this country; but within the last two or three months there had been a comparative restoration of tranquility on the continent, and a decided improvement had manifested itself in all the principal branches of our trade and manufactures; and we enter upon the current year with every reasonable ground of hope that we might witness in 1849 a revival of comparative prosperity of trade.

The CHAIRMAN then adverted to comparative statistical returns relating to the shipping and tonnage in the port of London, and of the ships' tonnage and landings, and stock of goods in warehouses in the St. Katharine Docks in the last three years, of which the following were the particulars:—

ABSTRACT showing the number of ships and their registered tonnage that entered the port of London with cargoes from foreign parts in the last three years, and the number that entered the St. Katherine Docks during the same period:—

PORT OF LONDON.

	BRITISH.		FOREIGN.		TOTAL.	
Years.	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
1846	5228	1,134,646	2479	393,388	7707	1,528,034
1847	6265	1,426,612	3105	492,344	9370	1,918,956
1848	6477	1,384,655	3052	429,415	9529	1,814,070

BRITISH—Increase of ships in 1848 over 1847, 212; decrease in tonnage, 41,957.
FOREIGN—Decrease in ships 1848, 53; decrease in tonnage, 62,929.
TOTAL—Increase 1848, 159 ships; decrease in tonnage, 104,886 tons.

ST. KATHARINE DOCKS—(LIKE PERIODS).

ENTERED WITH CARGOES FROM FOREIGN PORTS.

1846.		1847.		1848.	
Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
673	171,481	742	190,857	649	135,082

The tonnage of ships entered in 1848, light to load, exceeded the year 1847, 5705 tons.
N.B.—The year of 1847 was one of extraordinary importation of corn, flour, and provisions. The number of vessels laden with those articles that entered the St. Katharine Docks in 1847 was 103, and 37,138 registered tons; if these are deducted from the arrivals in 1847 the shipping and tonnage that entered these docks in 1848 would have exceeded the preceding year.

MERCHANDISE—ST. KATHARINE DOCKS.

		1846.	1847.	1848.
Goods in warehouse 31st Dec.	Tons	61,091	70,772	70,152
Landed during the above years		117,925	157,720*	122,558

[* Of which about 40,000 consisted of corn, flour, and provisions.]

The CHAIRMAN then proposed the resolution in the terms of the recommendations of the directors, as announced at the opening of the proceedings; but, previously to it being put to the vote, Mr. Smith, after having asked some questions which were most satisfactorily answered, declared that it was not his intention to move any amendment, upon which the resolution to pay dividend and income tax thereupon, as proposed, was unanimously agreed to, as also one of thanks, in highly complimentary terms (moved by Mr. Poynder, and seconded by Mr. Prevost), to the chairs, and the rest of the directors, for the great attention they had shown to the interests of the company.—The meeting then broke up.

LONDON AND WESTMINSTER BANK.

The annual general meeting of proprietors was held, at the banking-house, Lothbury, on Wednesday, the 17th inst.

CHARLES GIBBES, Esq., in the chair.

The CHAIRMAN congratulated the proprietors on the prosperous state of their affairs. He was glad to announce that the directors would now be able to restore to the reserved fund, with additions, the amount taken from it in July last, so that that fund would now be larger than it had ever been before. The bank was now in a sound and healthy state, and its business continued regularly and steadily to increase.—The SECRETARY then read the report, as follows:—

The directors have to report that the net profits of the bank, during the last half-year, have amounted to 37,237*l.* 3s. 1d.; out of these profits they now declare a dividend at the rate of 6 per cent. per annum. After the payment of this dividend, there will remain the sum of 7237*l.* 3s. 1d. to be added to the surplus fund, which will then amount to 102,723*l.* 16s. 11d.

The three directors who go out by rotation, are Thomas Chapman, Esq., Joshua Walker, Esq., and Henry Buckle, Esq., all of whom, being eligible, offer themselves for re-election.

London and Westminster Bank, Dec. 31, 1848.

Dr.			
To proprietors for paid-up capital	£	998,768	0 0
Amount due by the bank for deposits, circular notes, &c.		3,089,659	3 7
Rest, or surplus fund		95,486	13 10
Profits of the past half-year		37,237	3 1
Total	£	4,221,151	0 6
Cr.			
By Government Stock, Exchequer Bills, and East India Bonds	£	1,189,213	1 3
Other securities, including bills discounted, loans to customers, &c.		2,386,469	14 5
Cash on hand		645,468	4 10
Total	£	4,221,151	0 6

Profit and Loss, from July 1 *to Dec.* 31, 1848.

Dr.			
To payment of the dividend now declared, at the rate of 6 per cent. per annum, on a capital of 1,000,000*l.*, for the half-year ending Dec. 31.		30,000	0 0
Balance of unappropriated profits on June 30, 1848		102,723	16 11
Total	£	132,723	16 11
Cr.			
By balance of unappropriated profits on June 30, 1848	£	95,486	13 10
Net profits of the past half-year, after defraying the total expense of management, paying the income-tax, and making provision for all bad and doubtful debts		37,237	3 1
Total	£	132,723	16 11
Balance of unappropriated profits, brought down	£	102,723	16 11

The CHAIRMAN moved the adoption of the report, which was seconded; when Mr. TITE urged the propriety of appropriating some of their large reserve to the increase of future dividends: he also advocated making up the accounts once a year, instead of each half-year, as the latter plan was injurious to the market price of the stock.—The CHAIRMAN saw the advantages of yearly accounts, but advised the matter to remain in *statu quo* for another year.—Mr. MAUDSLAY regretted that a loss of about 20,000*l.* had been occasioned by the directors advancing money on colonial produce, which was contrary to the true principle of banking.—The CHAIRMAN said, it was a common thing with bankers to make those advances; and that the loss incurred was much less than that mentioned.—The report was then adopted.

Mr. LAMERT compared the state of the London Joint-Stock with this company—the paid-up capital of the former being 600,000*l.* less than the London and Westminster, and yet they were able to pay their shareholders 10 per cent. He complained of the low salaries paid by the company to their clerks, in comparison with the London Joint-Stock Bank.

The CHAIRMAN expressed the readiness of the directors to avail themselves of the liberality of the hon. proprietor, in respect to meritorious clerks, to raise their salaries as opportunities occurred.—A vote of thanks was unanimously passed to the directors, when the meeting adjourned.

THE LONDON JOINT-STOCK BANKING COMPANY.

The annual meeting of this company was held at the Bank, in Princes-street, on Thursday, the 18th inst., and was numerously attended.

AMBROSE MOORE, Esq., in the chair.

The SECRETARY (Mr. Hewitt) read the following report and balance-sheet:

The statement now submitted to the shareholders of the business of the bank during the half-year, ending the 31st December last, shows the net profit to be 24,775*l.* 2s. 10d. This amount, added to the 15,490*l.* 3s. 6d. left at the credit of the profit and loss account of the preceding half-year, gives the sum of 40,265*l.* 6s. 6d. to be now disposed of.

The directors, therefore, have decided to declare the usual dividend, after the rate of 6*l.* per centum per annum, and also a bonus of 7s. per share, both free from income-tax. These payments will leave a balance of 1265*l.* 6s. 6d. to be carried to the credit of the guarantee fund, which, with the six months' interest added thereto, according to the provision of the Deed of Settlement, will amount to 128,765*l.* 0s. 6d.

The seats in the direction which become vacant on this occasion are those of Sir Felix Booth, Bart., William Miller Christy, Esq., William Ormsby Gore, Esq., M.P., Henry Grace, Esq., and Sir Richard Jenkins, G.C.B.; and these gentlemen again offer themselves as candidates for re-election. The dividend and bonus will be payable on and after Friday, the 26th instant.

THE LONDON JOINT-STOCK BANK.

Dr.			
To capital paid-up—viz., 60,000 shares, at £10 each	£	600,000	0 0
Amount due by the bank		2,328,056	15 6
Amount of the "Guarantee Fund," June 30, 1848	£125,615	9 4	
Six months' interest on ditto, at £3 per cent, per ann.	1,884	4 8	— 127,499 14 0
Undivided profit for the last half-year		15,490	3 8
Balance carried to profit and loss account		61,087	17 3
Total	£	3,132,134	10 5
Cr.			
By Exchequer Bills, India Bonds, &c.	£	666,052	17 7
Bills discounted, loans, and cash		2,437,206	12 10
Building, furniture, &c., in Princes-street	£18,750	0 0	
Ditto ditto, in Pall-mall	10,125	0 0	— 28,875 0 0
Total	£	3,132,134	10 5

Profit and Loss Account of the London Joint-Stock Bank, for the half-year ending December 30, 1848.

Dr.			
To current expenses, proportion of building expenses, directors' remuneration, bad debs, income tax, &c.	£	27,620	19 11
Amount carried to profit and loss, new account, being rebate of interest on bills discounted not yet due		8,691	14 6
Amount transferred to the credit of the "Guarantee Fund," in addition to the above amount of £127,499 14s.		1,265	6 6
Dividend account for the payment of half-a-year's dividend, at the rate of £6 per centum per annum, upon £600,000, amount of paid-up capital upon 60,000 shares		18,000	0 0
Ditto for payment of a bonus of 7s. per share		21,000	0 0
Total	£	76,578	0 11
Cr.			
By balance brought down	£	61,087	17 3
Undivided profit brought forward from the last half-year		15,490	3 8
Total	£	76,578	0 11

The CHAIRMAN said: By the authority of the board of directors, I declare a dividend for the half-year ending the 31st ult., at the rate of 6 per cent. per annum, on 600,000*l.*, the amount of the paid-up capital, and a further division of 7s. a share out of the net profits of the year upon the 600,000 shares, constituting the capital of this company. I now beg to move, that the report now read be received, and printed for the use of the shareholders.—Mr. LANCASTER (deputy chairman) seconded the motion.

Mr. BORRADAILE said: As a whole the report, and I dare say every one will agree with me, is satisfactory. (Hear, hear.) The question I wish to put first, and which, I dare say, will be equally satisfactorily answered, is this—seeing the amount of profit is 24,000*l.* odd against the corresponding half-year, of 34,000*l.*, I should be glad to know how this profit is so much reduced. Is it from any over estimate of the assets, or profits, of that period, or does it arise from the great depreciation of the profits on banking business, that is, if it has been less profitable in itself? This time we perceive a difference of 8000*l.* or 9000*l.* The question is, therefore, from what does the difference between the profits of the present half-year arise? Is it from any bad debts remaining since the last meeting, or is it from banking business being less profitable than it has been in the preceding half-year?

The CHAIRMAN: I understand the question to relate to the comparative profits made in the two last half-years. The hon. proprietor asks why the profits are so much larger in the former than in the latter of the two. I can assign two reasons for the difference. The first is, that banking business was not so profitable, because money did not bear so high a rate of interest in the last as in the preceding half-year. (Hear, hear.) There is in favour of the former of the two half-years also this fact, that previous bad debts had been estimated at too low an amount, so that a sum, amounting to several thousand pounds, was recovered beyond that estimate, which was brought into, and mixed with, the profits of that half-year. I hope the meeting will believe that the accounts are always made up accurately, to the best of our judgment. (Hear, hear.) We have no object to serve in making the first half of a year appear better than the latter. The shareholders will perceive, I hope, from this circumstance, that the directors are in the habit of estimating bad debts at too low rather than at too high a rate—the consequence of which was, that the

WOOD CARVING BY MACHINERY.

At a recent meeting of the Society of Arts, in the Adelphi, Mr. Jordan, the patentee of this highly-important and interesting process, read a paper on the mode of operation adopted, and also descriptive of some considerable modifications which he had lately effected in carving wood; and also a new arrangement of the machinery by which Caen, Bath, and other free working stones and statuary marble could be operated upon most advantageously in an artistical point of view, and most economically in a pecuniary one. The paper was illustrated by models, diagrams, and some splended specimens of carved work by the machine in wood, Caen stone and marble. The horizontal part of the machine consists of a perfectly level cast-iron bed, or railway, which is fixed to the floor of the workshop; a second cast-iron frame runs on this with flanged wheels, and on this frame a large cast-iron table is made to run by similar wheels, at right angles to the former motion. These two movements in an horizontal plane give the most perfect facility of motion to the upper table, and hence it is called the "floating table." The pattern and pieces of work to be executed are firmly secured to this table, and it is furnished with convenient handles, by which the workman can move it in any required direction. The vertical part of the machine carries the tools for cutting the work, and the tracer for feeling over the pattern. The number of cutters used at one time varies with the size of the work—as many as six are frequently used, and each cutter produces its own copy of the pattern. The cutters are made to revolve at a very high velocity by steam-power; and the operator gradually moves the table, bringing successively every point of the pattern in connection with the tracing point—the cutters following its motions with mathematical precision, until every part has been gone over, and the misshapen block appears a beautiful and perfect *fac simile* of the pattern employed. Up to a very recent period, to obtain a counterpart, or left-handed copy of a right-handed object, Mr. Jordan was obliged to have newly-carved patterns cut by hand, which he found tedious and expensive. He has now completely succeeded in obtaining counterparts, with as much facility as copies. This is effected by having the upper slab divided in two parts, connected by a lever and attachment rods, in such manner that when one moves to the right the other moves to the left, and *vice versâ*; and by placing the pattern on one-half the slab, and the material to be worked on the other, a counterpart, and not a *fac simile*, is obtained; by lengthening, or shortening, the lever between the slabs, the counterpart may be made broader, or narrower, than the pattern, as may be required. The apparatus for carving stone is precisely on the same principle, but acting in a contrary direction to the wood-carving machine, the floating or carrying tables being vertical, and the cutting tools horizontal. The description elicited very great applause, and gave much satisfaction to a numerous audience. The patentee is deserving the highest encouragement, as placing within the reach of the upper and middle class *fac similes* of those noble works of art, which were known to the majority only by reading and hearsay, and which will naturally inculcate a taste for the fine arts, and a spirit of worthy emulation.

The Indicator, or Dynamometer, for Steam-Engines.—This useful instrument, which was originally invented by James Watt, and has been since simplified and improved by Mr. M'Naught, is, perhaps, hardly so universally known and appreciated as it ought to be, and we think we shall be doing our readers good service, by giving them a correct idea of its details and uses. The object of the steam-engine indicator is to enable us to ascertain the actual working condition of an engine, without reference to its nominal power. To do this with certainty, the varying pressures of the steam and the vacuum on the piston of the engine must be correctly registered at every point of its stroke. The indicator consists of a steam-cylinder, about an inch in diameter, containing a piston and piston rod, the upper end of which is encircled by a helical spring. This spring is so graduated, as to allow the piston of the indicator to rise, or fall, an eighth of an inch for every pound pressure per square inch to which it is exposed. An index being attached to the piston-rod and a scale, properly divided, to the outside of the cylinder, it is obvious that we could readily observe the highest, or lowest, pressure on the piston, and the indicator may be thus used, to show the pressure of the steam in a boiler, or the vacuum in a condenser; but to make it register a *varying* pressure, something more is required. By the side of this cylinder is placed a cylindrical paperholder, about 2 inches in diameter, round which the paper, on which the pressure is to be marked, is coiled. To the indicator piston-rod is attached a pencilholder, carrying a pencil, the point of which is pressed by a spring against the paper. The paperholder is carried by a vertical spindle, on which it can turn nearly round, and, by a small pulley and cord, motion is conveyed to it from some part of the steam-engine, which has a motion similar to that of the engine piston, generally from the parallel motion. The indicator is placed either at the top or bottom of the engine cylinder, and connected with the interior of it by a pipe and cock. When this cock is shut, and consequently the steam or vacuum not acting on the indicator piston, the pencil attached to it being stationary, will describe a horizontal line on the moving paper. This line is called the atmospheric line, and is zero upon the scale, as showing only the atmospheric pressure which is then equal on each side of the indicator piston; but when the cock is opened, the piston will be forced up above this line by the pressure of the steam, and below it by the pressure of the atmosphere, and the horizontal motion of the paper, combined with the varying vertical motion of the pencil, will describe a curved line on the paper, the height of which will represent the varying pressures of the steam and the vacuum at every point of the stroke. The mean pressure at a number of points being taken, and the diameter and length of stroke of the cylinder and the number of revolutions per minute being known, we can easily determine the gross amount of power exerted by the engine. From the shape of the curve we can tell whether the valves of the engine are properly set—a point of vital importance, but one very often not sufficiently attended to. An engine, which to the eye and the ear may be in perfect order, will, when tested by the indicator, often show a loss of from 10 or 20 per cent. of power from this cause. Every point of the economy of the engine may be as easily ascertained—the power expended in working different machines, the friction of the machinery when using different oils, and the want of attention to his duty on the part of the engine-driver.

London and North-Western Railway.—We have just learnt that a very important addition to the comfort and convenience of the travelling public has been suggested by the general manager of the company, Capt. Huish, and is likely to be brought into early operation. Our readers may have observed, that at the principal stations there are bookstalls, where popular literature as well as newspapers can be purchased. The supply of books is about to be increased and improved in character; and the whole of the stations on the line being undertaken by one party (Messrs. Smith and Son, of the Strand), Captain Huish proposes to establish a gigantic circulating library, on the plan that the passenger may select a book at a stall, paying the price thereof, and after travelling any distance on the railway, (where his journey terminates) deliver it at the station, receiving back the value, less a trifle for the perusal. When it is considered that the London and North-Western railway extends over nearly 500 miles, and that more than six millions of passengers travel upon it annually, we cannot conceive any plan more likely to while away a tedious hour, and improve the time necessarily spent in journeying.—*Chronicle.*

Compensation for Accidents on Railways.—An important case, under Lord Campbell's Act for compensation under accidents on railways, has just been settled by a jury at Dundee. The action was brought before the Lord Justice Clerk by a Mrs. Cargill, against the Dundee and Perth Railway Company, for damages sustained by the loss of her husband, a farmer, at Hollingside, near Newcastle, and who was killed in consequence of an accident on the line. The damages were laid at 5000*l.*, but a compromise was effected, by which the company undertook to settle an annuity of 75*l.* on the widow for life. The committee appointed by the inhabitants of Cheltenham to distribute the sum of 278*l.*, collected for the relief of the widows and children of the three men killed on the occasion of the accident at Hatherley Bridge, on the Great Western, have awarded to the widows and seven children each of two of the men 75*l.* of this sum; and to the third, with two children, 35*l.*; to the men who were injured and rendered incapable of work they have given similar sums, reserving 128*l.* to be put out at interest for apprenticing the children, or for their future benefit. The railway company subscribed the sum of 50*l.* towards the fund.

Large and Important Sale of Cast-Iron.—Messrs. Hutchison and Dixon, auctioneers, Glasgow, sold at Troon, by auction, about 1200 tons cast-iron. Mr. Dixon explained that the metal consisted of tram, rails, and chairs, which had been used on the Kilmarnock and Troon Railway. The whole was divided into eight parcels, and sold at from 38s. to 41s. per ton. The malleable iron scraps brought 63s. 6d. The attendance of founders and dealers (the former of whom were the buyers) from all parts of the country was numerous. The sale was a quick and most spirited affair, the biddings at the outset being near the prices realised. In addition to the price there falls to be paid 8s. 9d. per ton of carriage to Glasgow, which brings the old iron nearly to the figure at which certain brands of pig are selling here.—*North British Daily Mail.*

IMPROVED RAILWAY SLEEPERS AND CHAIRS.

We have on several occasions noticed the improvements made by Mr. Greaves in railway sleepers and chairs, which is effected by casting both in one mould; the lower part, or sleeper, is of a conical form, with an elliptical base, the chair being cast on the top of the cone; the major axis of the base is 3 feet, and the minor 20 inches, giving an area of about 4 feet. This conical sleeper is well filled with ballast, and inverted in its place, the major axis being at right angles with the rails, when the ballasting outside is well rammed down to the top of the cone, and the whole becomes firm and immoveable. Our contemporary, the *Morning Herald*, some days since, had a communication on this sleeper, in connection with the subject of railways in India, from C. Nicholson, Esq., the superintendent of the Great Indian Peninsular Railway, inclosing a report from Mr. Torkington, a railway contractor of Bury St. Edmonds, on the properties and capabilities of this sleeper and chair. This gentleman, we are informed, is a good authority on such subjects, and being totally unconnected with the patentees, can have no motive, but his sincere conviction of their superiority, in recommending their use. After speaking of the general defects which have been found in the present mode of uniting wood sleepers and iron chairs, he says—"The tendency of the iron pin is to get loose in the wooden sleeper, and of the wooden pin to get loose in the iron chair. Both of these tendencies are obviated by Mr. Greaves's plan, for the chair and sleeper are cast in one piece. Again; it is almost impossible to pack or beat the ballast under the wooden sleeper to an uniform density. In fact, it would require a fine calculation; and to show how a transverse sleeper ought to be packed to fully answer its purpose, it is clear that the ballast ought to be more dense under the rails and each end of the sleeper, than under the centre of the sleeper between the rails. But if it could be theoretically defined, it could not possibly be put into practice. The present method of packing or beating the ballast under the sleeper depends more upon the practice and intelligence of the workman than upon any scientific rules. In Mr. Greaves's iron sleepers the ballast is confined inside the cone, and is made equally dense throughout by beating through the two holes on the top, which can be done by a mere novice, and the whole bearing surface is directly under the rail. The transverse wood road is very liable to get out of line—indeed, it has nothing but its own weight, the friction of the bed of the sleepers upon the ballast, and the few inches of ballast there may be at each end of the sleeper to keep it in line. Hence one of the causes of oscillation we experience when riding in fast trains. With the iron sleeper, the ballast inside the cone unites with the ballast under the cone. I had the iron sleepers we were examining bored to the bottom, and no force which the plate-layers with their ordinary levers could exert upon them could move them one atom, either to the right hand or to the left.

"A road laid upon wooden sleepers will sink, to a greater or less extent, during the time a train is rolling over it, so that the engine has continually to ascend an incline plane, or what is equivalent, to depress the 'coming' rail, until the ballast is of equal density with that immediately under the driving-wheels; this arises from a combination of the causes named above, together with the changes of the atmosphere, and especially during wet weather. The iron sleepers are not so much affected by the weather, because the ballast under them is isolated from the surrounding ballast, and kept dry, and there is plenty of drainage for the whole of the surrounding ballast, without interfering with the ballast immediately under the sleepers, which is not the case with any description of wood roads. In all roads the joint sleepers are usually most out of order; the joint is evidently the weakest part of the rail, and has the least bearing, or support, from the chair, or sleeper—consequently, nearly all the joint sleepers we saw were surrounded with water, and worked up and down during the time the trains were passing over them. This was common to both wood and iron sleeper, but to a much less extent with the iron sleepers. The improvement I suggested in my last letter to you would, I think, remedy the evil. Instead of the above dimensions, I propose to make the joint sleepers cylindrical, and let the diameter be equal to the major axis of the oval sleepers, so that the whole of the sleepers would be in a line as at present; but we should get a larger longitudinal bearing surface. The area would be 3+·7834, equal to 7 square feet; this might be done without increasing the thickness of the metal, as the cylindrical form is stronger than the oval; and I would also increase the breadth of the chairs, and the length of the joint keys, both of which would have a tendency to stiffen and strengthen the joint.

"In conclusion; I consider that, in all cuttings and embankments that are become consolidated, these iron sleepers will ultimately drive out of use the wooden ones, and am convinced that the power and wear of the engine will be economised; the roads will be kept drier and in better repair, and at less cost, with iron than with wood sleepers, and the engines would ascend inclined planes with less slipping and greater ease than on the tranverse sleeper roads; and as to introducing the iron sleepers on your line in India, where it is a question of so much doubt whether wood can be made to answer the purpose of railway sleepers, and resist the attacks of insects, my opinion is most decidedly in favour of the conical iron sleepers; nor do I think that any timber can bear any comparison with them."

NEW RAILWAYS OPENED IN THE PAST YEAR.

England.—The aggregate length of new railways opened during the year 1848 was 750 miles, consisting of branches and portions of main lines belonging to the following railways:—Bristol and Exeter, 5 miles; Blackburn, Bolton, and West Yorkshire, 9; Chester and Holyhead, 80; East Anglian, 21: East Lancashire, 20: East Lincolnshire, 48; East and West Yorkshire, 16; Eastern Counties, 30; Eastern Union, 3; Great Northern, 69; Great Western, 31; Lancashire and Yorkshire, 84½; Leeds and Thirsk, 10; Leeds and Dewsbury, 20; Liverpool, Crosby, and Southport, 14; London and Brighton 10; London and South-Western, 24½; London and North-Western, 7; Newmarket, 18; North-Western, 6; Manchester, Sheffield, and Lincolnshire, 57; Midland, 57; North Staffordshire, 29; Shrewsbury and Chester, 28; South Devon, 27; York, Newcastle, and Berwick, 7; York and North-Midland, 24½ miles.

Scotland.—The aggregate length of new railways opened was 299 miles, belonging to the following railways:—Aberdeen 17½; Caledonian, 84; Dumfries and Carlisle, 24; Edinburgh and Glasgow, 9½; Edinburgh and Northern, 40; Glasgow and Ayr, 36½; Glasgow, Barrhead, and Neilston, 6½; North British, 16; Scottish Central, 46; and the Scottish Midland, 3.

Ireland.—The aggregate length of new railways opened was 158 miles, belonging to the following railways:—Belfast and Ballymena, 38; Belfast and County Down, 4½; Great Southern and Western, 44; Irish South-Eastern, 10½; Midland Great-Western, 14; Ulster, 11; Waterford and Kilkenny, 11; and Waterford and Limerick, 25.

It would appear, therefore, that the aggregate length of new lines opened for traffic in the United Kingdom during the past year was 1207 miles.

Statistical Returns of Foreign Railways in 1849.—The following is from the official return of the length of the whole of the railways on the continent:—1. France, 2000 kilometres.—2. Germany, 5392.—3. Belgium, 795.—4. Holland, 260.—5. Denmark, 195; ditto, comprising the duchies of Schleswig and Holstein, 990 kilometres—viz.: 240 open, 16 nearly finished, and 734 kilometres projected.—6. Switzerland, 125.—7. Italy, 260.—8. Hungary, 250.—9. Russia, 180.—10. Poland, 300 = 10,552 kilometres, or 2110 leagues. A great number of branch lines are in course of construction (and projected) throughout the continent; but, from the present unsettled political state of Austria and other parts of the north of Europe and Italy, added to the very great scarcity of money generally in France, and other dominions, railway progress and speculation have, for a time, become at a standstill. For Spain there is only, as yet, a short line from Barcelona; but Portugal, Turkey, &c., are without any whatever.

Caledonian Railway.—It appears that several dissentient shareholders in this company have determined on opposing the contemplated lease of the Scottish Central, the Scottish Midland, and the Dundee and Perth Railways by the directors of the Caledonian Company. A subscription of 1s. per share has been entered into for the purpose of raising a fund to defray the expense of opposing the bills about to be brought into Parliament for saddling the Caledonian Company with the guarantees provisionally entered into by the directors

Dublin and Belfast.—It is stated that Government have determined on making an advance to the Dublin and Belfast Junction line of 300,000*l.*, the amount necessary to complete it. The ground on which this assistance is to be rendered is, that as the Great Southern and Western of Ireland, the great trunk line to the south, has been accommodated by the Government with the loan of half a million, it would not be dealing impartially to withhold similar assistance to the Dublin and Belfast, which is the great trunk line to the north.

South-Eastern.—The trains now run right into the harbour terminus at Folkestone, to the steam-boat station, thus materially accelerating the continental transit. A great swing bridge has been thrown across the quay constructed for this purpose. The company are about to enlarge their station accommodation in this quarter, with the view of making Folkestone their great water terminus.

South Wales Railway.—The steam-engine for this line is working on it in the vicinity of Pyle, Glamorganshire, in gallant style, greatly surprising the "natives" with the velocity of its movements. The company are supplied with coke and coal by the Galvanised Iron Company, from their works at Cefn Cwse, near Bridgend. The railway company have nearly 20,000 tons of permanent iron rails, in the port of Neath, ready for use as soon as required.

North Staffordshire Railway.—At a meeting of manufacturers recently held at Hanley, to consider the best method to be adopted for obtaining a reduction in the rate of tonnage charged on raw material and manufactured goods in their transit along the Trent and Mersey Canal, now vested in the railway company, it was resolved to apply to Parliament, in the ensuing session, to have a clause inserted in the company's Act for that purpose.

Now that Chester has become the centre of so many railways, it is intended to apply to Parliament next session for powers to improve its port and harbour.

Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.

This Day	Asiatic—5, New Burlington-street	2 P.M.
	Royal Botanic—Inner Circle, Regent's Park	3½ P.M.
Monday	Geographical—3, Waterloo-place	8½ P.M.
	Entomological—17, Old Bond-street	8 P.M.
	British Architects—16, Grosvenor-street	8 P.M.
	Medical—Bolt-court, Fleet-street	8 P.M.
Tuesday	Medical and Chirurgical—53, Berners-street	8½ P.M.
	Zoological—11, Hanover-square	9 P.M.
Wednesday	Society of Arts—Adelphi	8 P.M.
	Microscopical—21, Regent-street	8 P.M.
	Ethnological—17, Saville-row	8 P.M.
Thursday	Royal—Somerset-house	8½ P.M.
	Antiquaries—Somerset-house	8 P.M.
	Royal Society of Literature—St. Martin's-place	4 P.M.
	Numismatic—41, Tavistock-street, Covent-garden	7 P.M.
Friday	Royal Institution—Albemarle-street	3½ P.M.
	Philological—London Library, 12, St. James's-square	8 P.M.
Saturday	Westminster Medical—17, Saville-row	8 P.M.

The Poetry of Science.

The second lecture upon this highly interesting subject, delivered at the Western Literary Institution, Leicester-square, by Mr. Robert Hunt, author of the admirable and popular work recently published under the above title, was attended by an unusually large number of the members and their friends.

Mr. Hunt said, that the subject of his last lecture had been the formation of different masses of common stone; and, ascending from those to a higher class of natural phenomena, he intended to proceed that evening to the contemplation of powers which related to life, organic and vegetable. A somewhat ancient and curious proposition—viz.: that stones grow, that plants grow and live, and that animals live and move, had passed into a truism. It was, however, correct only in part; stones grew only in a certain sense: they were formed by the aggregation of particles, and so far might be said to grow; but plants grew in a far superior degree, by converting the elements around them into their own bodies. The plant upon the table—the sickly appearance of which bore ample testimony to the injurious character of the atmosphere of Leicester-square—when placed in the soil, increased in size; and to explain what arrangement of forces was necessary to produce that effect, would form the subject of the discourse of that evening. The elements of vegetable and organic life were chemically the same: they consisted of oxygen, hydrogen, carbon, the metallic oxides, and also nitrogen; and these were each, more or less, essential, as well for the existence of plants as of animals. Nitrogen, for instance, was derived by plants from the earth; animals derived it from vegetables, and man from vegetables, and animals subsisting on vegetable food. The whole presented a chain, in which the links were all complete. They had already seen that the forces which go to the formation of a stone were electricity, heat, chemical action, and sundry other subtle powers of which little was at present known; but it was not less certain, that the same powers were employed in the formation of organic matter, with the addition of that which, for want of a better name, was called the vital force.

Confining the attention of his auditory to one particular, rather than wearying it with reference to many at the same time, the talented lecturer proceeded to describe the formation of plants. In the first instance, a small seed, which consisted of carbon, hydrogen, nitrogen, and oxygen, was placed in the soil. There, at a proper temperature, somewhat above the freezing and below the boiling point, a chemical action took place. The starch in the seed was converted into sugar, and presently a peculiar development took place, as evidenced by the appearance of a breathing arrangement, consisting of two little globes, by which the plants took in the carbon diffused throughout the soil, and gave out oxygen to the air. As the plant progressed, this process, which was indispensable to the formation of the woody matter of the plant, went on: and while the plant thus obtained the carbon necessary for itself, it liberated that oxygen which was equally necessary for the preservation of animal life. There was, however, another remarkable feature in the process. It was necessary that the seed should be placed beneath the soil, or in a shady, moist, warm place, the light of the sun being injurious to germination; and this fact would render it necessary for him to refer to certain physical conditions which belonged to the solar rays. If a sunbeam fell through a prism, a certain order of colours would arise, differing from each other in the intensity of their light. These different portions of the sun's rays were all essential to the production of organic life; but it had been discovered, that the various parts were more applicable to particular portions of the process. In dividing the sun's rays, it must be understood that the colours had nothing to do with the particular properties by which they were accompanied. Thus, the red portion of the ray was the hottest, yet that had nothing to do with the element of heat; and although the greatest chemical action took place under the blue ray, that colour had nothing to do with chemical force. The talented lecturer then exhibited several diagrams, in which the composition of the solar ray, when directed through a triangular prism, was depicted. The lower portion, which was red, contained the maximum amount of heat; the centre, which was yellow, the maximum amount of luminous power; and the upper, or blue end, the maximum of chemical action. It was by thus dividing the solar light, and allowing only the blue rays to fall upon prepared plates, that photographic portraits were taken—the chemical action being sufficient to turn nitrate of silver black. It had been discovered that, by the interposition of coloured media, these different powers could be separated. Blue glass would admit only the chemical; yellow the luminous; and red, the heating power of the solar ray. The process of germination being injured by the luminous power, Nature had provided that seeds should be buried beneath the surface of the soil, at different depths, according to their different peculiarities. If, however, a yellow glass were placed over the soil, the germination of the seed beneath was entirely prevented. On the contrary, if a piece of dark blue glass were placed over the soil, the process of germination became exceedingly rapid; and it was a curious fact that, by this media seeds might be made to germinate at much greater depths than those at which under ordinary circumstances, they would grow. When he (Mr. Hunt), some eight or nine years ago, made the discovery of this fact, in his anxiety to make it public, he announced the circumstance without thoroughly testing its results. Upon this, Mr. Pellet, the enterprising and scientific glass manufacturer, glassed a cucumber bed with a coloured media, manufactured for the purpose. The result was, an enormous and extraordinary development of stalk, with scarcely any leaves, and no fruit at all. It thus appeared that, after the germination had taken place, the continued application of chemical action became too great for the plant, which was then in the same condition as that in which an animal would be placed if it were made to inhale exclusively pure oxygen gas, instead of the mixture which constituted our atmosphere. Further experiments showed that the luminous power was indispensable for the production of leaves; but, with the blue and yellow media alone, he had never been able to produce flowers and fruit. He then tried the influence of red glass, which permitted the radiation of calorific rays, and the result was satisfactory. The action of three distinct solar agencies was necessary in the formation of a perfect plant. Following out the ideas suggested by these experiments, it was further discovered, that in spring the sun's rays possessed a larger proportion of actinism, or chemical power; that in summer the luminous power predominated; and in autumn, the calorific; while in winter, in which neither the process of germination, the formation of branches and leaves, nor the development and ripening of flowers and fruits, had to be carried on, the three powers were as nearly balanced as possible. This, he considered, was one of the points which deserved to be classed amongst those manifold wonders of Nature which constituted the *poetry of science.*

The talented lecturer then proceeded to discuss the peculiarities which marked the distribution of plants on the surface of the globe, which he illustrated by reference to a large map, on which were laid down the isothermal lines of Humboldt. He differed from the commonly-received notion, that the temperature was the sole influence to which the distribution of plants was to be referred. It had been satisfactorily shown that the sun's rays varied considerably in different parts of the world, and he therefore had good reason to believe that light, heat, actinism, and electricity, had more to do with it than temperature. Indeed, the gigantic vegetation of the tropical, as well as the dwarf firs and reindeer moss of the arctic regions, were clearly dependent upon the balance of the several forces in the solar ray. On this, too, he believed, depended the peculiar character of races, for man and animals were liable to the same influences. The talented lecturer supported this view by a reference to the influences which the breathing of plants and animals had upon the atmosphere. The luxurious vegetation of the tropics, produced large supplies of that nitrogenous princi-

ple which was indispensable to man, while the more thickly populated regions returned ample supplies of carbonic acid for the healthful sustenance of the vegetable kingdom. The existence, therefore, of the vegetable was indispensable to the animal, and the animal to the vegetable.

Mr. Hunt then described, at some length, the interesting experiments which he had undertaken at the request of the Commissioners of Woods and Forests, in order to discover whether it were possible, in the construction of the new palm-house at Kew, to obtain a glass which should intercept a peculiar scorching, or browning action, in the sun's rays which was found to be injurious to the tropical plants in that conservatory. He soon found that a dark green glass would produce the desired effect; but that interfered too much with the luminous and calorific principles, besides giving an unnatural tinge to the fruits and flowers. He, however, eventually discovered that a glass with almost an invisible tinge of green, provided it were made without manganese, was the desideratum required; and he had no doubt that the palm-house at Kew, which had been glazed under his directions, would, in future, have in its lighting nothing which would interfere with a truthful exhibition of the peculiar characteristics of tropical vegetation. After some further remarks upon electricity and electro-culture, Mr. Hunt concluded his interesting lecture, which had been received throughout with warm expressions of approbation, in the following eloquent sentences:—"Prometheus stole fire from heaven to animate mere potter's clay; but our philosophy has shown us that it is the empyrean powers derived from solar sources that support organised forms, and maintain the activity of life. Where the sunbeam penetrates, the joy and gladness of animation is seen; but beyond its influence the stagnancy of death reigns in gloom and silence. The Greek fable was a beautiful shadowing forth of our philosophic truth. Man, in the most early times, has always felt that unseen agencies were behind the curtain of creation, and his fertile fancy gave human forms to the powers which he could not be ignorant were ever active around him. Modern science has drawn a charmed circle, and at her call, the spirits, which our forefathers could not understand, have been subdued to do us service. In the place of the Oread and Dryad, of the Faun or the Satyr, we have now light, heat, and electricity. Mystery still lieth behind them—we know them but by their effects—their causes are yet as inscrutable as was the subtle nature of the wonder-working spirits of antiquity to the intellectual Grecian. The conceit of Pythagoras, that the movement of planets and their position in space was regulated by musical harmony, that Saturn progressed to Doric strains, and Jupiter to Phrygian music, exhibits the efforts of a powerful mind to give form and character to that harmony which it felt and saw in Nature's works, and believed to embrace the universe. In all, and through all, the sage saw a delightful order, and the harmonious vibrations of musical instruments became the type of that law which has since, under other terms, become an established fact to man. Such is the poetry which science reveals; and the philosopher, by studying the truths of science aright, becomes the poet, and translates, for his own enjoyment and the benefit of mankind,

> "The tongues in trees,—books in the running brooks,
> Sermons in stones,—and good in everything."

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Will you kindly allow me to correct an inexact expression, which occurs in your report of my lecture on the "Poetry of Science," by which your two correspondents have been misled? The stone which I exhibited, containing a *rolled water-worn pebble*, was taken from one of the elvan dykes of Cornwall, and the error arises from my having, being obliged to use popular language, described this elvan as being of a granitic character. The lead lodes of Devon and Cornwall were stated to be, *in general*, at right angles to the main direction of the copper lodes of these counties, and, therefore, adduced as evidence, merely, of the probability that some determinate force, *like* dia-magnetism, regulated these conditions.—ROBERT HUNT: *January* 15.

INSTITUTION OF CIVIL ENGINEERS.

JANUARY 16.—JOSHUA FIELD, Esq. (President), in the chair.

The annual general meeting of this institution was held on Tuesday evening, January 16, when the following gentlemen were elected to form the council for the ensuing year:—J. Field, president; W. Cubit, J. M. Rendel, J. Simpson, and R. Stephenson, M.P., vice-presidents; J. F. Bateman, G. P. Bidder, I. K. Brunel, J. Cubit, J. Fowler, C. H. Gregory, J. Locke, M.P., J. R. Mc Clean, C. May, and J. Miller, members; and W. Harding and T. Piper, associates of council.

The report of the council was read, and from the statement of its financial position the society appeared to be governed by men of foresight, who had very properly restricted the ordinary expenditure within prudential limits, whilst the pressure of the times was felt so heavily by all classes. It, however, held out cheering hopes for the future, for, as it observed, "in a country like Great Britain, whose distinguishing characteristic is energetic and indomitable courage in circumstances of difficulty, it is not probable that any foreign political excitement can long continue to exercise a prejudicial effect; already the horizon is brightening, and a little reflection will demonstrate, that in proportion to the injury arising from the late stagnation, must be the activity on the resumption of the works; and it appears to be acknowledged that the forced economy, which has been practised during the past year, has caused such a necessity for supplies of working stock, and for the improvement of works, that the engineering profession must be generally benefitted on the return of confidence in financial affairs."

Satisfactory reasons were given for the unusual delay in the publication of the Minutes of Proceedings, and a simple but effective plan was detailed for paying off the debt incurred for the alterations of the house of the institution.

Telford metals were presented to the Right Honourable the Earl of Lovelace, Messrs. Harrison, Mitchell, and Ransome; council premiums of books to Messrs. Harrison and Jackson; and Telford premiums of books to Messrs. Redman, Green, and Rankine; the president addressing a few complimentary words to each of these gentlemen on presenting the medals and premiums.

Memoirs were read of the deceased members:—Messrs. B. Cubitt, T. Hopkins, S. Fowls, members; Lieut.-Colonel Brandreth, P. L. Campbell, F. Carleton, and T. E. Steele, associates; and J. Pope, graduate. These contained some very interesting biography, and, as a specimen, we may give that of the late Tom Steele, who was a very old associate of the institution.

"Mr. Thomas Ennis Steele was the descendant of an ancient and honourable family in the County Clare, where he inherited a beautiful estate, and few men have commenced their career with brighter prospects. He graduated and took his degrees at Trinity College, Dublin, about the year 1817; he then removed to Trinity College, Cambridge, in 1820, and obtained the degree of Master of Arts in that University, on the books of which his name was always retained, and he regularly appeared at the elections. He was an elegant classical scholar, but more particularly directed his attention to mathematics, mechanics, and the application of chemistry to the arts; he also, at one period, devoted much of his time to the study of geology, with the avowed object of preparing himself for travelling in the east; a project which was probably prevented by his entanglement in politics. His attention being directed to the bad state of the navigation of the River Shannon, he determined to make a personal survey of the bed of the river, which he did in the most complete manner, employing sometimes very original means; such, for instance, as stepping along the line of a reef or shoal, supporting himself with one hand upon the stern of a boat, whilst he measured and recorded all the inequalities of the surface, and ascertaining the nature of the rock, or ground. An account of this survey was published by him; and no greater proof of its utility can be given, than the fact of the greater portion of his suggestions having been followed in the works that have been since executed. His attention being thus directed to the diving bell, he devised several alterations in its construction and application—particularly a method of lighting the divers, during their submarine labours. All these, with many similar subjects, were published in the current periodicals of the day, and some of them were communicated to this institution. At a later period, a favourite theme upon which he repeatedly addressed the institution, was the purchase of the birth-place of Sir Isaac Newton, and its preservation by the scientific world, in the same manner as Shakespere's house has since been obtained by the exertions of literary and dramatic men. He embarked deeply in Irish politics, and became the devoted follower of O'Connell, about the year 1825; but upon that portion of his career, the incumbrance of his fortune, and the melancholy termination of the life of a man who might have been an invaluable member of society, this memoir cannot dwell. His political opponents, however, all acknowledged his honourable feelings, and the entire absence of selfishness in all his actions; and in his last hours he had the gratification of seeing the bitterest among them vieing with each other in their anxiety to serve honest Tom Steele. He was the most chivalrously minded of men, the most affectionate of friends, and the most devoted of followers, still preserving his independence of mind. He entertained no private resentments which might not instantly be extinguished by the slightest approach to conciliation, even on the part of one who might have deeply injured him; and it may with truth be said, that he never deliberately committed an act by which he thought he should lose a friend, create an enemy, or injure a fellow-creature. After the decease of his chosen leader, Mr. Steele abondoned politics, and though visibly declining in health and spirits, he steadfastly rejected all offers of assistance from his friends, who desired to cheer the evening of his days, and on the 15th of June, 1848, he expired—a man of fallen fortunes, a crushed spirit, and a broken heart, but universally beloved by all who knew and could estimate the man, apart from the politician."

Votes of thanks were passed unanimously to the president, vice-presidents, members, and associates of the council, and to the secretary; and the president, in returning thanks, gave a memoir of the late George Stephenson, and his connection with the combination of the fire tubes and the blast pipe in the locomotive, which constituted it the life of the present railway system. The address was responded to very warmly, and the meeting adjourned until Tuesday, February 6th, when the following paper was announced to be read—"On the Abbattoirs of Paris"—By R. B. Grantham, M. Inst. C. E.

LARGE SCYTHE FACTORY IN AMERICA.—The scythe manufacturing establishment of Reuben B. Dunn, Esq., at North Wane, in Main, is the largest of the kind in the world. The establishment consists, besides warehouses, furnishing shops, &c., of three principle buildings for manufacturing, two of which are 144 feet in length. In these, and in departments connected with the establishment, are employed about 100 men, many of whom have families settled at the place. A flourishing village has grown up within a few years, and is rapidly increasing: 12,000 dozen scythes are annually manufactured, to produce which are required 450,000 lbs. of iron, 75,600 lbs. of steel, 1200 tons of hard coal, 10,000 bushels of charcoal, 100 tons of grindstones, and half a ton of borax. This last article is used in the process of welding. Mr. Dunn is erecting additional works in the vicinity, which will be soon completed, when he will be enabled to turn out 17,000 dozen scythes annually. This establishment is now more than double the extent of any other in the world—none even in England being found to compete with it.—*New York Farmer and Mechanic.*

The first section of the Demerara Railway has just been opened, and the planters are availing themselves largely of the facilities it affords for the transmission of sugar, &c., from their estates.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

MONDAY.....Union Bank of Australia—offices, at One.
TUESDAY.....Consolidated Copper Mines of Cobre Association—offices, at One.
THURSDAY....London and Brighton Railway—Bridge-house Hotel, at One.
FRIDAY.....Australian Agricultural Company—offices, at One.
SATURDAY.....Australian Trust Company—offices, at Twelve.

[*The meetings of Mining Companies are inserted among the Mining Intelligence.*]

ST. KATHARINE DOCKS COMPANY.

The annual half-yearly general meeting was held, on Thursday, the 18th January, in the dock house, Tower-hill.

T. TOOKE, Esq. (chairman of the dock company), presided.

The SECRETARY read the notice convening the meeting, which had been published in the *Gazette* and usual daily papers. The accounts of receipt and expenditure of the company, for the year ending the 31st December last, which had as usual, and in accordance with the provisions of the Dock Act, been accessible to the proprietors during the preceding 14 days, were laid upon the table. From these it appeared that the general balance in favour of the company, on the 1st of January 1848, was 88,980*l.* 19s. 3d., and that the balance brought forward on the first day of the present year was 92,364*l.* 6s. 10d., showing an increase of 3383*l.* 7s. 7d. That the gross earnings of the company were, during the past year, 235,696*l.* 10s. 5d.; and the expenses (less the charge for interest) 132,549*l.* 10s. 11d., leaving a balance of 103,146*l.* 19s. 6d.; from which, deducting 33,616*l.* 1s. 11d., interest on the present amount of the floating debt (of which 395,750*l.* had been already extinguished, by the operation of the measure of conversion in progress), left a balance, applicable to dividend for the past year, of 72,530*l.* 17s. 7d.; deduct therefrom half-year's dividend, paid in July last, amounting to 35,136*l.* 14s. 9d., left applicable to dividend, in the six months ended December last, 37,394*l.* 2s. 10d.; out of which the directors recommend, that a dividend should be declared of 2 per cent, for the half-year ended 31st December last, and that the property tax thereon be defrayed, as usual, by the company. The dividend would amount to 36,075*l.* 5s. 9d., when there would remain a sum of 1318*l.* 17s. 1d. to be added to the rest, which would increase the amount thereof to 56,289*l.* 1s. 1d.

The CHAIRMAN next proceeded to observe, that in the proposal of a dividend of 2 per cent. for the last half-year, the directors did not apprehend any objection on the part of the proprietors, because it was in accordance with the motives which induced the resolution of the meeting, in January, 1848, to reduce the annual dividend to 4 per cent. per annum, with a view to a gradual restoration to the rest of the sums which had been withdrawn from it in keeping up the former dividend of 5 per cent. per annum; but they were prepared to expect that the propriety of their recommendation of the payment of the income tax on the dividends to be defrayed by the company, would be called in question, as a proprietor (Mr. T. Smith), whose opinions, whenever he had occasion to express them on the state of the affairs of the company, had been received with attention and deference, had intimated his objection to the practice. At the meeting in January, 1848, and again in July last, he (Mr. Smith) urged strongly the discontinuance of such payment; and, on the latter occasion, he gave notice that, at the next meeting of proprietors, which would be held in this month of January, he would bring the subject distinctly before the proprietors. This Mr. Smith would then have the opportunity of doing, upon he (the chairman) submitting the resolution intended to be proposed for approval; but, previously to moving such resolution, the CHAIRMAN begged to state, that the directors had been induced to devote their attention specially to the consideration of the question; and the result of their deliberation had been a unanimous opinion against a departure from the practice heretofore observed—in truth, the point in question was not one of principle, but merely of expedience and convenience. It resolved itself entirely into a question of more or less of dividend. On a dividend of 4 per cent., the income tax of 7d. in 1*l.* was 2s. 4d. Assuming that the profits of the company admitted of dividing out of them among the proprietors 4*l.* 2s. 4d. per cent., and that such dividend were accordingly declared; but leaving the proprietors to pay each his own tax, the result would be, that the proprietors, if they actually received the 4*l.* 2s. 4d., would have to pay over to the tax collector, through the hands of the Dock Company, 2s. 4d.—thus retaining 4*l.* It came, therefore, exactly to the same thing, if the 2s. 4d. was paid by the company, leaving equally the 4*l.* clear to the proprietor.

But, in fact, the company were bound by law, in the first instance, to pay the 2s. 4d. per cent. to the Government; and if the charge was to be borne by the proprietor, it could only be in the way of deduction from his dividend warrant, thus leaving upon the face of it a net sum payable to him of 3*l.* 17s. 8d. If the profits did not afford 4 per cent., plus the income tax, that, doubtless, might be a reason for not dividing so much; but it would still be a question whether it would not be more expedient and convenient, in that case, to reduce the whole dividend, than merely that part of it which went to pay the income tax. In the present instance, the profits of the past year were upwards of 4*l.* per cent., and provided for the payment of the income tax, leaving a surplus to be added to the rest. If, however, the proprietors should require to have the income tax deducted from the declared dividend of 4 per cent., the effect would be that of further adding to the rest a sum of 2104*l.* 7s. 8d., being the amount of the tax of 7d. in 1*l.* on the year's dividend.

In the meantime, the accounts and statistical returns which were before them suggested a few remarks. The gross earnings for the past year amounted to 235,696*l.* 10s. 5d.—an amount considerably below that of the earnings of 1847; but the great excess of importations in 1847, chiefly of provisions, took that year out of the category of ordinary seasons. Taking, therefore, as a fairer point of comparison, 1846, in which trade was in an undisturbed and apparently prosperous state, it appeared that the gross receipts, in 1848, showed an excess of 5881*l.* 15s. 7d. in the gross earnings, as compared with 1846. It was true that there was an excess of charges in 1848, which more than counterbalanced the excess of gross earnings over 1846 by about 2400*l.*; that excess was chiefly [illegible] able to the following heads:—

[illegible]ages and other items, the increase caused by an excess of landings and deliveries and by the description of several of the articles requiring more operations and labour, making a total of 8983*l.* On the other hand, there was in the receipts for 1846 an amount [illegible]000*l.* for rent in Irongate Wharf, while, in consequence of the conflagration, no rent had been received in 1848; but, as with the sum received for the fire insurance, the wharf and warehouses were being rebuilt, and a lease since granted, rent would be receivable in 1849. The view would, perhaps, be still more favourable, if rejecting 1847 as altogether exceptional, they compared the statistical returns of landings in 1846 and 1848:—Landed in 1848, 122,558 tons; ditto in 1846, 117,925 ditto—excess in 1848, 4633 tons. As the landings form, upon the whole, the best criterion of the quality of business resorting to these docks, it might be satisfactory to state the amount of them for each of the last seven years:—1842, 106,370 tons; 1843, 106,726 ditto; 1844, 101,355 ditto; 1845, 111,917 ditto; 1846, 117,925 ditto; 1847, 157,720 ditto; 1848, 122,558 ditto.

It would hence be seen that, with the exception of 1844, when in consequence of a long prevalence of easterly winds, and an obstruction of the navigation by ice, there were hardly any arrivals in December of that year, and with the further exception of 1847, when the arrivals were monstrously swelled by accidental circumstances, there had been a steady increase of the quantity of goods landed in the docks.

In addressing them at this period of last year, he (the chairman) took occasion to notice the depressed state and gloomy prospects of trade, and soon afterwards the revolutions that broke out on the continent of Europe were added to the other causes of the disturbed and distressed state of the commerce of this country; but within the last two or three months there had been a comparative restoration of tranquility on the continent, and a decided improvement had manifested itself in all the principal branches of our trade and manufactures; and we enter upon the current year with every reasonable ground of hope that we might witness in 1849 a revival of comparative prosperity of trade.

The CHAIRMAN then adverted to comparative statistical returns relating to the shipping and tonnage in the port of London, and of the ships' tonnage and landings, and stock of goods in warehouses in the St. Katharine Docks in the last three years, of which the following were the particulars.—

ABSTRACT showing the number of ships and their registered tonnage that entered the port of London with cargoes from foreign parts in the last three years, and the number that entered the St. Katherine Docks during the same period:—

PORT OF LONDON.

	BRITISH.		FOREIGN.		TOTAL.	
Years.	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
1846	5228	1,134,646	2479	393,388	7707	1,528,034
1847	6265	1,426,612	3105	492,344	9370	1,918,956
1848	6477	1,384,655	3052	429,415	9529	1,814,070

BRITISH—Increase of ships in 1848 over 1847, 212; decrease in tonnage, 41,957.
FOREIGN—Decrease in ships 1848, 53; decrease in tonnage, 62,929.
TOTAL—Increase 1848, 159 ships; decrease in tonnage, 104,886 tons.

ST. KATHARINE DOCKS—(LIKE PERIODS).

ENTERED WITH CARGOES FROM FOREIGN PORTS.

1846.		1847.		1848.	
Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
673	171,491	742	190,857	649	155,082

The tonnage of ships entered in 1848, light to load, exceeded the year 1847, 5705 tons.

N.B.—The year of 1847 was one of extraordinary importation of corn, flour, and provisions. The number of vessels laden with those articles that entered the St. Katharine Docks in 1847 was 103, and 37,138 registered tons; if these are deducted from the arrivals in 1847 the shipping and tonnage that entered these docks in 1848 would have exceeded the preceding year.

MERCHANDISE—ST. KATHARINE DOCKS.

		1846.	1847.	1848.
Goods in warehouse 31st Dec.	*Tons*	61,091	70,772	70,152
Landed during the above years		117,925	157,720*	122,558

[* Of which about 40,000 consisted of corn, flour, and provisions.]

The CHAIRMAN then proposed the resolution in the terms of the recommendations of the directors, as announced at the opening of the proceedings; but, previously to it being put to the vote, Mr. Smith, after having asked some questions which were most satisfactorily answered, declared that it was not his intention to move any amendment, upon which the resolution to pay dividend and income tax thereupon, as proposed, was unanimously agreed to, as also one of thanks, in highly complimentary terms (moved by Mr. Poynder, and seconded by Mr. Prevost), to the chairs, and the rest of the directors, for the great attention they had shown to the interests of the company.—The meeting then broke up.

LONDON AND WESTMINSTER BANK.

The annual general meeting of proprietors was held, at the banking-house, Lothbury, on Wednesday, the 17th inst.

CHARLES GIBBES, Esq., in the chair.

The CHAIRMAN congratulated the proprietors on the prosperous state of their affairs. He was glad to announce that the directors would now be able to restore to the reserved fund, with additions, the amount taken from it in July last, so that that fund would now be larger than it had ever been before. The bank was now in a sound and healthy state, and its business continued regularly and steadily to increase.—The SECRETARY then read the report, as follows:—

The directors have to report that the net profits of the bank, during the last half-year, have amounted to 37,237*l.* 3s. 1d.; out of these profits they now declare a dividend at the rate of 6 per cent. per annum. After the payment of this dividend, there will remain the sum of 7237*l.* 3s. 1d. to be added to the surplus fund, which will then amount to 102,723*l.* 16s. 11d.

The three directors who go out by rotation, are Thomas Chapman, Esq., Joshua Walker, Esq., and Henry Buckle, Esq., all of whom, being eligible, offer themselves for re-election.

Dr. *London and Westminster Bank, Dec.* 31, 1848.			
To proprietors for paid-up capital	£	998,768	0 0
Amount due by the bank for deposits, circular notes, &c.		3,089,659	3 7
Rest, or surplus fund		95,486	13 10
Profits of the past half-year		37,237	3 1
Total	£	4,221,151	0 6
Cr.			
By Government Stock, Exchequer Bills, and East India Bonds	£	1,189,213	1 3
Other securities, including bills discounted, loans to customers, &c.		2,386,469	14 5
Cash on hand		645,468	4 10
Total	£	4,221,151	0 6

Dr. *Profit and Loss, from July* 1 *to Dec.* 31, 1848.			
To payment of the dividend now declared, at the rate of 6 per cent. per annum, on a capital of 1,000,000*l.*, for the half-year ending Dec. 31..		30,000	0 0
Balance of unappropriated profits on June 30, 1848		102,723	16 11
Total	£	132,723	16 11
Cr.			
By balance of unappropriated profits on June 30, 1848	£	95,486	13 10
Net profits of the past half-year, after defraying the total expense of management, paying the income-tax, and making provision for all bad and doubtful debts		37,237	3 1
Total	£	132,723	16 11
Balance of unappropriated profits, brought down	£	102,723	16 11

The CHAIRMAN moved the adoption of the report, which was seconded; when Mr. TITE urged the propriety of appropriating some of their large reserve to the increase of future dividends: he also advocated making up the accounts once a year, instead of each half-year, as the latter plan was injurious to the market price of the stock.—The CHAIRMAN saw the advantages of yearly accounts, but advised the matter to remain in *statu quo* for another year.—Mr. MAUDSLAY regretted that a loss of about 20,000*l.* had been occasioned by the directors advancing money on colonial produce, which was contrary to the true principle of banking.—The CHAIRMAN said, it was a common thing with bankers to make those advances; and that the loss incurred was much less than that mentioned.—The report was then adopted.

Mr. LAMERT compared the state of the London Joint-Stock with this company—the paid-up capital of the former being 600,000*l.* less than the London and Westminster, and yet they were able to pay their shareholders 10 per cent. He complained of the low salaries paid by the company to their clerks, in comparison with the London Joint-Stock Bank.

The CHAIRMAN expressed the readiness of the directors to avail themselves of the liberality of the hon. proprietor, in respect to meritorious clerks, to raise their salaries as opportunities occurred.—A vote of thanks was unanimously passed to the directors, when the meeting adjourned.

THE LONDON JOINT-STOCK BANKING COMPANY.

The annual meeting of this company was held at the Bank, in Princes-street, on Thursday, the 18th inst., and was numerously attended.

AMBROSE MOORE, Esq., in the chair.

The SECRETARY (Mr. Hewitt) read the following report and balance-sheet:

The statement now submitted to the shareholders of the business of the bank during the half-year, ending the 31st December last, shows the net profit to be 24,775*l.* 2s. 10d. This amount, added to the 15,490*l.* 3s. 8d. left at the credit of the profit and loss account of the preceding half-year, gives the sum of 40,265*l.* 6s. 6d. to be now disposed of.

The directors, therefore, have decided to declare the usual dividend, after the rate of 6*l.* per centum per annum, and also a bonus of 7s. per share, both free from income-tax. These payments will leave a balance of 1265*l.* 6s. 6d. to be carried to the credit of the guarantee fund, which, with the six months' interest added thereto, according to the provision of the Deed of Settlement, will amount to 128,765*l.* 0s. 6d.

The seats in the direction which become vacant on this occasion are those of Sir Felix Booth, Bart., William Miller Christy, Esq., William Ormsby Gore, Esq., M.P., Henry Grace, Esq., and Sir Richard Jenkins, G.C.B.; and these gentlemen again offer themselves as candidates for re-election. The dividend and bonus will be payable on and after Friday, the 26th instant.

THE LONDON JOINT-STOCK BANK.

Dr. *Liabilities and Assets, Saturday, December* 30, 1848.			
To capital paid-up—viz., 60,000 shares, at £10 each	£	600,000	0 0
Amount due by the bank		2,328,056	15 6
Amount of the "Guarantee Fund," June 30, 1848.... £125,515 9 4			
Six months' interest on ditto, at £3 per cent, per ann. 1,884 4 8 —		127,499	14 0
Undivided profit for the last half-year		15,490	3 8
Balance carried to profit and loss account		61,087	17 3
Total	£	3,132,134	10 5
Cr.			
By Exchequer Bills, India Bonds, &c.	£	666,052	17 7
Bills discounted, loans, and cash		2,437,206	12 10
Building, furniture, &c., in Princes-street	£18,750 0 0		
Ditto ditto, in Pall-mall	10,125 0 0 —	28,875	0 0
Total	£	3,132,134	10 5

Dr. *Profit and Loss Account of the London Joint-Stock Bank, for the half-year ending December* 30, 1848.			
To current expenses, proportion of building expenses, directors' remuneration, bad debs, income tax, &c.	£	27,620	19 11
Amount carried to profit and loss, new account, being rebate of interest on bills discounted not yet due		3,691	14 6
Amount transferred to the credit of the "Guarantee Fund," in addition to the above amount of £127,499 14s.		1,265	6 6
Dividend account for the payment of half-a-year's dividend, at the rate of £6 per centum per annum, upon £600,000, amount of paid-up capital upon 60,000 shares		18,000	0 0
Ditto for payment of a bonus of 7s. per share		21,000	0 0
Total	£	76,578	0 11
Cr.			
By balance brought down	£	61,087	17 3
Undivided profit brought forward from the last half-year		15,490	3 8
Total	£	76,578	0 11

The CHAIRMAN said: By the authority of the board of directors, I declare a dividend for the half-year ending the 31st ult., at the rate of 6 per cent. per annum, on 600,000*l.*, the amount of the paid-up capital, and a further division of 7s. a share out of the net profits of the year upon the 600,000 shares, constituting the capital of this company. I now beg to move, that the report now read be received, and printed for the use of the shareholders.—Mr. LANCASTER (deputy chairman) seconded the motion.

Mr. BORRADAILE said: As a whole the report, and I dare say every one will agree with me, is satisfactory. (Hear, hear.) The question I wish to put first, and which, I dare say, will be equally satisfactorily answered, is this—seeing the amount of profit is 24,000*l.* odd against the corresponding half-year, of 34,000*l.*, I should be glad to know how this profit is so much reduced. Is it from any over estimate of the assets, or profits, of that period, or does it arise from the great depreciation of the profits on banking business, that is, if it has been less profitable in itself? This time we perceive a difference of 8000*l.* or 9000*l.* The question is, therefore, from what does the difference between the profits of the present half-year arise? Is it from any bad debts remaining since the last meeting, or is it from banking business being less profitable than it has been in the preceding half-year?

The CHAIRMAN: I understand the question to relate to the comparative profits made in the two last half-years. The hon. proprietor asks why the profits are so much larger in the former than in the latter of the two. I can assign two reasons for the difference. The first is, that banking business was not so profitable, because money did not bear so high a rate of interest in the last as in the preceding half-year. (Hear, hear.) There is in favour of the former of the two half-years also this fact, that previous bad debts had been estimated at too low an amount, so that a sum, amounting to several thousand pounds, was recovered beyond that estimate, which was brought into, and mixed with, the profits of that half-year. I hope the meeting will believe that the accounts are always made up accurately, to the best of our judgment. (Hear, hear.) We have no object to serve in making the first half of a year appear better than the latter. The shareholders will perceive, I hope, from this circumstance, that the directors are in the habit of estimating bad debts at too low rather than at too high a rate—the consequence of which was, that the

profits of the first half-year of 1848 were considerably increased from former bad debts, having been taken at too low a rate. (Hear, hear.)

The report was then adopted unanimously.

The CHAIRMAN then said, that there were five vacancies in the direction of the bank, and that, as the gentlemen who were mentioned were the only candidates, he would propose them, *seriatim*, for re-election.

The following gentlemen were then elected unanimously:—Sir Felix Booth, Bart., W. Miller Christy, Esq., William Ormsby Gore, Esq., M.P., H. Grace, Esq., and Sir Richard Jenkins, G.C.B.

Mr. GRACE said: As the junior director, who has offered himself this day for re-election, I beg, on behalf of myself and colleagues, to return our hearty thanks for your confidence, and to assure you, that we duly consider the honourable and important position in which we are placed by your votes, and that it demands our warmest thanks. I can assure you, that it will afford us, as hitherto, the greatest pleasure to employ our best energies to promote the interest of the company. (Applause.)

Mr. BORRADALE moved a vote of thanks to the chairman and directors, which was passed unanimously.

The CHAIRMAN thanked them for this mark of confidence towards the directors, and he could assure them that, like Mr. Grace and the other gentlemen who had been re-elected, their most diligent and earnest endeavours would be used to promote the interest and respectability of the bank, and their profit as shareholders in it. (Applause.)

A vote of thanks was unanimously passed to Mr. Pollard, the manager, for the great attention he had devoted to the interest of the bank, and his personal attention to its customers.—Mr. POLLARD returned thanks, when the meeting adjourned.

BANK OF AUSTRALASIA.

The half-yearly meeting of this company was held on Monday, the 15th inst., at the establishment in Austinfriars.

OLIVER FARRER, Esq., in the chair.

Mr. MILLIKEN (the secretary) read the following statement, prepared by the directors for this meeting:—

The directors, adopting the precedent established at the last half-yearly meeting, held in Dec., 1847, now submit to the shareholders the few following observations on the present condition of the bank:—In the general state of the bank there has been but little alteration. At Sydney and Launceston, by orders of the directors, the business has been restricted; but at Melbourne and Adelaide, the improvement noticed in the last report has continued in a manner which encourages the expectation that these branches are likely to become sources of solid and permanent advantage to the corporation. The directors are unable to report the realisation of the properties held by the bank, but they look forward with confidence to the future, in consequence of the abundant supply of labour now being furnished to the colonies, and to the advance which has already taken place in the wool market in this country.

The directors regret to state, that circumstances have arisen which have imposed upon them the painful duty of removing Mr. Hart from the office of superintendent; and Mr. James John Falconer, the assistant superintendent, has been appointed to assume charge of that office.

With respect to the debt due by the Bank of Australia, the directors have pleasure in stating, that they have come to an arrangement with a portion of the extra-colonial shareholders, resident in England, which they consider satisfactory. They are likewise negociating for a similar arrangement with other extra-colonial shareholders, which they expect also to bring to a favourable conclusion; but, should this not be the case, the directors will at once, on the arrival of the judgment in England, proceed to enforce payment of the claim against them. In the colony the actual reversal of the judgment, in accordance with the order of the Privy Council, could not be made until after the 1st October last; but, in the meantime, the shareholders there have been making great exertions to liquidate the debt, in the hope of rendering legal proceedings against them unnecessary; and, from the report of the superintendent, with whom they have been in communication, the directors have good reason to believe that those exertions would be successful. The profits in the half-year have answered the expectations of the directors, and on the new business no losses of any importance have been incurred.

The CHAIRMAN enlarged on the topics of the report in a very able manner, in which he was generally applauded by those present. The main point of discussion was the removal of Mr. Hart from the office of superintendent, and the liabilities to which he had subjected the bank.

The CHAIRMAN, in reply to Mr. Serjeant Gazelee, said, the business would not be under one person's control, for the manager, as well as the local board, would have to concur with the superintendent, who would also be aided by the valuable advice of Mr. Hatherton.

Mr. FORSTER (one of the directors) regretted the difficulties which had arisen through the bank discontinuing the paper of Mr. Hart, and he (Mr. Hart) had been led to believe, that every assistance would have been afforded by his friends in this country, seeing that his father had died possessed of considerable property. It was his opinion that Mr. Hart's intention was to have fulfilled all his engagements with the bank, and that these disappointments he had met with had been the only cause of preventing him.—In reply to a shareholder,

The CHAIRMAN said, the amount now due from the bank of Australia, with interest, was about 200,000*l*. It was his intention, and that of the board, to show no preference towards any shareholder of that bank, but to look to every one to liquidate his amount of the liability; and he was happy to find that there was every appearance of their doing so, to avoid the cost of legal measures.

After some considerable discussion,

Mr. TIDSON moved a vote of confidence in the chairman and directors, which was seconded by Mr. Wootten, and agreed to unanimously, when the meeting adjourned.

CAMERON'S COALBROOK STEAM-COAL AND SWANSEA AND LOUGHOR RAILWAY COMPANY.

An adjourned special general meeting of shareholders was held at the offices, of the company, on Wednesday, the 17th inst.

N. P. CAMERON, Esq., in the chair.

The notice convening the meeting, as also the proceedings of the past meeting, were read.—Capt. NORCOTT briefly introduced a resolution, to the effect that the report of Mr. Dagleish be the basis of the course to be adopted by the shareholders, which having been seconded, several of the shareholders present evinced a desire to rid themselves of the liabilities incurred.

Mr. BURLS, in a lengthy address, adverted to the past proceedings of the company, at the same time that he expressed his conviction that the property was in itself valuable. The question, however, was, had they paid "to dear for their whistle?"—or, with the obligations imposed upon the company, was it calculated to be of advantage to the shareholders to proceed further? His opinion was decidedly in the negative, as all that had taken place heretofore, as well as the inquiries instituted by him, and those with whom he was associated, was to the one and same effect—viz.: that the mine was worked improvidently, and that, as regarded the directors, although he was ready to admit they were all honourable men, yet, strange as it might appear, they had conducted the concern in a manner, as was admitted by Mr. Elderton, the solicitor of the company, to bring them to a state of bankruptcy. The hon. proprietor entered, at great length, on the several points that have been so repeatedly dilated upon, and argued as to become tiresome, which we deem it unnecessary to report; indeed, we feel that a very brief notice of what took place, while no result was arrived at, will well satisfy the shareholders, and, we feel well convinced, most please our readers.

Col. CAMERON expressed his readiness, that if any doubt existed as to the validity of the lease, which had been inferred by the remarks of Mr. Burls, that he, or rather his son, was ready to render it perfect.

Mr. ELDERTON, as solicitor to the company, stated that he was not aware of any informality in the lease, and that with reference to the *promised* proceedings in Chancery, he had only to say that he was prepared to meet any point which might be raised.

Mr. FRY, as solicitor to the dissentient shareholders, observed that the statements before the proprietors formed not one tithe of such as would come before the Court of Chancery. He would wish to avoid any such course, and would rather advise his clients to at once forfeit their shares, and sacrifice the amount paid thereon, than, as he was advised, to prosecute the working of the colliery, or get into Chancery.

Mr. SMALLBONE, in a very sensible and brief address, recommended the middle course; but it was manifest that the opinion of the meeting had been arrived at before the hour of their assembling, and hence the remarks of that gentleman, like those of others, passed by unnoticed.

Mr. ELDERTON felt much pleasure in stating that Mr. Fry and himself had arranged that a committee, consisting of the chairman, Mr. Burls, Mr. Smallbone, Mr. Fry, and himself, should meet and enter into the question in dispute, which appeared to meet with the unanimous feeling of the meeting.

Mr. FRY wished it to be perfectly understood that, while he was ready to act in any way which would be conducive to the interest of the shareholders, yet he could not consent to act without instructions being given by the meeting; and, furthermore, that it must be clearly understood he did not admit the validity of the lease, or agreements connected therewith.

A lengthened and desultory conversation ensued, and the meeting broke up without arriving at any conclusion but that of the resolution, as amended, that the offer of Mr. Cameron be "respectfully declined," and which was carried unanimously.

LONDON LIFE ASSOCIATION.—The half-yearly general meeting was held, at the offices, King William-street, on Wednesday, the 17th inst. The chair was taken by Mr. Charles Franks. The auditors' report showed that, including a balance of 22,345*l*. 13s. 8d., the receipts for the half-year ending the 31st December last had amounted to 264,872*l*. 3s. 1d. On the other side the account, it appeared that, in the same period, 38,999*l*. had been paid in discharge of claims on policies, 9565*l*. 19s. 5d. had been invested in the purchase of policies, 70,541*l*. 14s. advanced on mortgage, in addition to 14,445*l*. upon policies of the association, whilst the remaining items of salaries, pensions, purchase of stock, income tax, &c., left a balance in favour of the association upon the half-year's transactions of 22,867*l*. 4s. 6d. The income arising from the funded property and other assets of the association, on the 31st December last, was stated to be 95,767*l*. 19s. from annual dividends and interest on mortgages; 203,519*l*. 9s. 3d. from 4780 existing policies—total, 299,287*l*. 8s. 3d. The accounts having been unanimously passed, the proceedings terminated.

THE ELECTRIC LIGHT—Mr. STAITE'S SPECIFICATION.

[Specification of patent granted to William Edwards Staite, of Lombard-street, City, for improvements in the construction of galvanic batteries in the formation of magnets, and in the application of electricity and magnetism, for the purpose of lighting and signalising, as also a mode or modes of employing the said galvanic batteries, or some of them, for the purpose of obtaining chemical products, parts of which improvements are a communication. Patent dated July 12, 1848.

This invention is set forth by the patentee in a specification of great length; but amongst the varied details of the invention therein described, the points of most import appear to be—1. The construction of an electric battery, upon what is termed the *perfluent* system—that is, constructed with such arrangements and appliances, that the exciting fluid shall be passed successively into and through each cell of the battery, beginning with the first, and be discharged from the last cell into a suitable reservoir; which is effected either by so constructing the trough, that the liquid is not permitted to enter the second cell till it has passed through the first; or by the use of a system of syphons, effecting the same purpose, but allowing the passage from one cell to the other to be varied, as the nature of the solution used may require. Mr. Staite remarks, that the electric action given off is greatest at the central cell, and gradually diminishes in each succeeding one, but that the ratio of decrease is not equal between the last and middle cell—the last cell being considerably more diminished in intensity; and that, in order to render the intensity equivalent, the wires from several cells should be combined at the last.

2. An improved mode of regulating the supply and discharge of liquids employed in galvanic batteries.

3. The construction of a meter, for supplying the battery with the fluids used, so that a large quantity may be put into it, and, by means of the peculiar arrangements thereof, passed through the cells with equability at the rapidity required.

4. The use, in batteries having either copper, or mercury, for the negative element, of a liquid amalgam compound of zinc and of mercury, enclosed in a bag, or case of lawn, horse-hair cloth, or other reticulated fabric, provided it be not a metallic fabric, and exposed to the action of the acid.

5. The use in galvanic batteries of plates of a similar amalgam, composed of five parts of zinc to one of mercury.

6. The employment in batteries of lead as the positive element, combined with any known negative element; though, Mr. Staite remarks, the best negative element would be a surface of platinum.

7. The construction of a galvanometer, or instrument for testing, with precision, the amount, or intensity, of the electric action—an instrument of much use in ascertaining the speed at which the solution should be allowed to pass through the cells of the battery.

8. The invention consists in the formation of magnets in the manner following. The best Swedish charcoal iron is to be "converted," not in the ordinary manner, but only by a slight carbonization, or what is technically termed, carbonizing it "just steel through." The blistered product is then melted and cast, and the ingot resulting from the process, is rolled out into thick sheet metal.

9. The invention consists in the following improved mode of hardening magnets, previous to magnetising them. Instead of heating them, as usual, in an ordinary furnace or sand bath, they are heated in a bath of melted metal, raised to a red heat (using by preference lead), first polishing the magnets, in order to prevent the lead or its oxide from adhering to their surfaces, the heat of the lead being only just sufficient to harden the magnets; on taking them out of the bath, they are afterwards plunged into water,

10. Various improvements upon the mechanism and arrangements of the apparatus for producing electric light, as formerly described in the *Mining Journal*, amongst which is an improvement, whereby the construction and action of the upper charcoal point, or electrode, is caused to revolve against a scraper, which removes the charcoal deposits, invariably passing from the lower piece of charcoal, and attaching themselves to the upper.

Another improvement in the lamp consists in substituting for the upper electrodes previously employed, a disc, or circular electrode, fixed on an axis, which disc has a slow motion imparted to it in any given direction by the moving power employed in the lamp. Impinging on the periphery of this disc, there is a metal scraper, which keeps the edge of the disc clean, and free from the particles of carbon which are projected upon it by the other electrode, and which ordinarily collects, in the shape of a button, on the point of the electrode.

A further improvement consists in the employment of iridium as an electrode, which is suitable for smaller lights—iridium being, of all known metals, the hardest and most intractable, and bearing an excessive degree of heat without fusing.

11. The invention consists of certain arrangements for producing a regularly intermittent light from electricity, especially suitable for lighthouses, and may be applied to other purposes.

12. The invention consists in improving the intensity of the electric current, whatever may be the nature of the lamp, or apparatus, used for producing the light; this is effected by including in the electric circuit a long coil of insulated copper ribbon, wound in an iron case, whereby it will be easy, at the same time, to reduce the number of cells employed.

13. The invention consists in inclosing the solid electrodes, employed in electric lamps, in supporting tubes.

14. The invention consists in improved modes of preparing the materials for electrodes.

Lastly: "The invention consists in the employment of galvanic batteries for the purpose of obtaining various chemical products, and this either in conjunction with the employment of them for lighting and motive purposes, or as substitutes for the ordinary processes of chemical manufacture. The batteries should be of one or other of the perfluent sorts, hereinbefore described, on account of the facilities which they afford for drawing off the products of the galvanic action, which products may consist either of matters in a marketable state, or which require some additional treatment to make them of commercial value. The elements proper to be employed will vary in each case with the chemical product or products desired to be obtained, or to state the matter conversely, the perfluent products will vary with the elements employed. For example, where zinc is used as the positive metal with sulphuric acid, sulphate of zinc is formed; but sulphate of zinc in large quantities would not be of great commercial value. When, therefore, I use zinc as aforesaid, I collect the sulphate of zinc and treat it as follows:—I add, in a separate vessel, to the solution of sulphate of zinc a solution of sesqui-carbonate of ammonia, which precipitates the oxide of the zinc metal, and releases the acid, which may be used again. This oxide of zinc is a valuable substiture for carbonate of lead as a pigment, and may be used extensively for painting purposes. Again, suppose any of the salts of lead are required to be produced, such as nitrate of lead (white lead), or sulphate of lead, or any other chemical substance, to the production of which these salts may be auxiliary, the battery should be constructed of lead, or other metal plates, platinized and excited to action by dilute nitric acid. The acid acting on the oxide of lead, formed by the electrolytic process, or decomposition of water, dissolves it, and forms with it a solution of the nitrate of lead; and this solution is afterwards treated in a separate vessel, or vessels, with the carbonate, or bicarbonate of potash, when a double decomposition takes place; and, the carbonate of lead being precipitated, the matter of commerce remains in solution, and is obtained by evaporation. Supposing, further, the platinised plates of lead, or other metal, are used with muriatic acid, dilute or not, then the acid is decomposed, and a solution of chloride of lead is the resulting product. If, for the platinised plates, we substitute iron or zinc plates, the chloride of iron or of zinc is respectively obtained. Should a battery of copper and of iron plates, charged with a solution of sulphate of copper, be employed, the iron is oxidised, the sulphuric acid unites with the oxide by superior affinity, and forms with it sulphate of iron (the green copperas of commerce) which remains in solution, and may be obtained by evaporation as before. The hydrogen, which is released, goes to the other plate—that is, to the copper plate; and, meeting there, the disengaged oxide of copper, reduces it to the metallic state, and, in fact, plates the copper with it. This form of battery is directly applicable to the production of metallic copper from the ores of the sulphuret, decomposed by water, or from the water drawn from certain copper mines, which contain sulphate of copper in solution; the sulphate of iron obtained forms also a very fine ochre."

The claims are to the invention substantially described.

Patent-office and Designs Registry, 210, Strand, Jan. 19.

THE BOVEY IRON AND CHARCOAL COMPANY.—We have been informed, although we believe the fact is not known beyond a small circle of capitalists likely to become interested in the undertaking, that a joint stock company is on the eve of formation, for the manufacture of charcoal from the Bovey Tracy liguite, and bar iron from the charcoal thus obtained. It is said that pure charcoal can be manufactured from lignite at 10s. per ton, while the present price for wood charcoal in England, is from 3*l*. to 4*l*., and on the continent, 50s. per ton, and that markets are already secured in Holland and France for a considerable sale. The iron imported by Great Britain, from Norway, Sweden, and Russia, for steel manufacture, at prices varying from 10*l*. to 30*l*., amounts to 20,000 tons annually; while the promoters of this company show that the best steel iron can be made, from the primitive iron ores of Devonshire, with lignite charcoal, at a cost not exceeding 6*l*. per ton, and that an immediate demand, of at least 3,000 tons per annum, may be calculated upon. At a meeting in the City, on the 22nd of December last, a committee was appointed, who have since arranged the preliminary matters, and it is proposed that the capital be 25,000*l*., in 2500 shares of 10*l*. each; 2*l*. 10s. to be paid up, and the company to be fully registered on proof that charcoal and iron can be manufactured at the above prices. The capital to be repaid out of the first profits, with five per cent. interest, before the promoters receive dividends, they, however, receiving, on signing the contracts held by them to the company, 2500 additional shares fully paid up. The promoters, we are informed, are practical iron masters, well acquainted with the iron manufacture, and the home and foreign trade; and it is confidently expected that the entire capital will be repaid within four years.

The Compendium of British Mining.

ORIGINALLY COMPILED AND PUBLISHED IN 1843.
REVISED, CORRECTED, AND ENLARGED FOR THE "MINING JOURNAL,"
BY J. Y. WATSON, ESQ., F.G.S.

EASTERN DISTRICT.

WHEAL TREHANE SILVER-LEAD MINE, is in the parish of Menheniotte, near Liskeard, and on the same lode as Wheal Trelawny and Mary Ann. Conducted on the Cost-book System. In 256 shares, 1*l*. 5s. per share paid up; market price, 30*l*. per share. Purser, Mr. John Philp, Liskeard; agent on the mine, Capt. Samuel Richards. Trehane Mine consists of two setts, the principal being held on lease for 21 years, at 1-15th dues, from 25th March, 1846, of Mr. Thomas Kelly. For this sett a premium of 500*l*. was paid. The other sett consists of two fields belonging to the St. Germains school, and joins the land of Mr. Kelly to the north-west; for this a premium of 100*l*. was paid, and the lease for 21 years, at 1-15th dues, is dated 1st of May, 1847. Operations were first commenced in March, 1846, in Kelly's field, and on the 7th December of the same year, a parcel of silver-lead ore, weighing 35 tons 10 cwts., was sold at 24*l*. 13s. per ton. From this time the mine continued to progress, and up to the 28th November last has returned 647 tons 8 cwts. 2 qrs., yielding in money, 12,022*l*. 15s. 5d.; and 39 tons 17 cwts. of gossan ore, which sold for 119*l*. 8s. 6d. On the 1st of March, 1847, twelve months after the commencement of the mine, the first dividend of profit, amounting to 1*l*. per share, was made; and up to 28th November last, the profits divided have been 2752*l*., or 10*l*. 15s. per share, on a paid-up capital of 1*l*. 5s. The next dividend will be declared on the 25th inst. The land comprised in the two setts extends from north to south about 200 fms., and from east to west above 300 fathoms. Two shafts have been sunk; and the main shaft is 61 fathoms deep from surface. There are five levels; the first driven was 20 fms. from surface. The greatest length of level opened is at the 30, which is about 100 fathoms long. The 35, 45, and 55 fm. levels are now driving and opening out good ore ground. About 100 miners and labourers are employed, besides boys and girls engaged in dressing the ore, of which about 35 tons per month are raised, at a cost of something like 300*l*., leaving about 300*l*. of profit per month. The main bearing of the lode is nearly true north and south, and passes through a soft blue killas; it contains, besides silver-lead ore, mundic, fluor and quartzose spar, hornstone, barytes, and carbonate of iron. From the main shaft a cross-cut has been driven in the 30 fathom level, in search of a parallel lode; throughout this cross-cut the strata is of a favourable character, and should a lode be met with, it would greatly enhance the value of the mine. Gossan and spar have already been turned up costeaning further west, supposed to be from the back of a lode not far distant from the end of the cross-cut, which is being continued towards it. The rise and progress of Trehane is so extraordinary, showing how those who ought to be best able to judge of the run of a lode may be deceived, that I cannot forbear giving a few particulars. The mine, as before stated, is on the same lode as Trelawny, and does, in fact, take the lode from that mine for nearly 100 fms. in length, thus completely dividing the latter. The original sett of Trelawny was bounded on the north by Trehane, and a field directly opposite (to the east), belonging to Dr. Honey; the northern part of the mine, now called North Trelawny, and on the other side of Trehane, was then obtained, and the question arose, through which ground would the lode pass to the north mine—Trehane or Dr. Honey's: the then agents of Trelawny insisted it ran through the latter, and refused to buy the former, which was then purchased by Mr. Philp and others for 500*l*., and who began operations, as before stated. I remember in May, 1846 (about two months after a shaft had been commenced in search of the lode in Trehane), being at Trelawny, where the (then) agents, with every advantage of dialling their lode, had placed pegs along the surface, upon its assumed course, making it to go direct through Dr. Honey's field, and they seemed to think those who had bought Trehane, and were so perseveringly exploring for the lode, were little better than madmen. Having with me, however, an agent in whom I had the utmost confidence, and who felt persuaded the Trehane folks were right, and the Trelawny wrong, I immediately wrote to some of the principal shareholders of Trelawny in London, advising their immediate purchase of Trehane, or all the shares they could obtain. They thought it best, however (and which was but natural), to follow the advice of their agents, and gave 1200*l*. for Dr. Honey's field. A very short time showed their money was thrown away, and that the very kernel of their mine was lost to them in Trehane, and which, had it but belonged to their sett, would have made Trelawny one of the first lead mines in Cornwall. The lode, it is but right to observe, passes through the narrowest part of Trehane sett, yet at 30 fms. deep there is a run of it of more than 100 fms., and as the underlie east is very trifling to the 55 (indeed, in some places, nothing whatever), it is calculated by the agents that it will continue in the sett for more than 100 fms. deeper than the 55, and have a good length at that great depth, although it would gradually become narrower.

[To be continued in next week's Mining Journal.]

Mining Correspondence.

ENGLISH MINES.

ASHBURTON UNITED.—Captain J. Kernick (January 15) reports—The pitches in the 45 fm. level, on the north lode, are much the same as last reported, except one of the pitches in the middle cross-cut, where the lode is divided by a horse of killas, and an improvement in the most eastern pitch. The cross-cut in the 35 fm. level, to cut the north lode above the pitches named has been driven 3 fms. during the last week; it is in a fine piece of ground and I have promised the men half-a-guinea extra if they cut the lode by next setting-day. The 55 fm. level, and the other levels both on the north and south lodes, have not altered since the last report. Our batch of tin for the month ending 12th January is 5 tons, which we have sent off; and for the month before, ending in December, it was 4 tons 14 cwts. 3 qrs. 27 lbs., the bill of particulars of which are enclosed.

BARRISTOWN.—Captain T. Angove (Jan. 12) reports—We have intersected another slide in the 16 fathom level end east, which has heaved the lode; the back behind this end looks much the same as last reported. The lode in the adit end is a little improved, producing about 7 cwts. of lead per fm.; the lode in the winze, sinking in bottom of adit level, is about 5 ft. wide, producing about 7 cwts. of lead per fathom; the pitches in back of adit level are looking much the same as heretofore. I enclose you the *Fanny Truss* bill of lading for 35 tons of lead ore.

BEDFORD UNITED.—Capt. James Phillips (Jan. 17) reports—At Wheal Marquis, in consequence of the water having been turned out to repair the channel, but little has been done in the 103 fm. level south. In the 90 fm. level east the caples appear to be gradually wearing out, and I hope to be able to report a favourable change shortly. We do not intend taking down the lode in the 80 fm. level east for a few fathoms. In the 70 fm. level east the lode is 18 in. wide, producing stones of ore in places.

DEAN PRIOR AND BUCKFASTLEIGH.—Capt. H. Choake (Jan. 17) reports—I stated in my last report, that we was about to cut into the north part of the lode in the 60 fm. level, east of cross-cut, and finding the lode still hard, we have only laid open about 2 ft., and have again commenced driving east, in order to prove the lode further ahead; we are carrying a small portion of the lode in driving, being composed of capel, spar, and mundic; we have driven in the past week 1 fm. 3 ft.—present price for driving, 3*l*. 5s. per fm. In the end, driving west at this level, the lode has a very favourable appearance, carrying a bunch near the hanging-wall, composed of soft spar, prian, and mundic, about 8 in. big; to the north of this branch the lode is composed chiefly of capel, with some spots of yellow ore; driven in the past week, 1 fm. 2 ft. 6 in.—present price for driving, 3*l*. 10s. per fm.

EAST BIRCH TOR TIN.—Capt. Thomas Moyle (Jan. 11) reports—We have now repaired the engine-shaft on the south lode, No. 4, cleared the adit level, and got everything complete for sinking under the same, which we shall begin to do next week. We find a very good lode in the bottom of this adit level, and which I purpose to report on more fully in my next. We are making some little alterations in the lower stamps, to stamp out the tin ore as we raise it. The tributers' work will be dressed forthwith.

EAST CROWNDALE.—Captain S. Paull (Jan. 18) reports—The ground in Diamond's engine-shaft continues just as when last reported upon; Thomas's lode, in this place, through which we are now sinking, is from 4 to 5 ft. wide, composed of peach, prian, spar, mundic, killas, and spots of tin. Thomas's lode, in the adit level west, is looking pretty much the same as when last reported upon, except that the ground is much improved; the lode is composed of peach, prian, spar, mundic, killas, and tin—worth upwards of 80*l*. per fm.; the stopes in the back of this level are poor at present, the men being engaged bringing on a stope of ground, which has not proved so productive as ground still further west, which will be reached in a few days. Our engine, stamps, &c., are all in good order.

GOGINAN.—Capts. Absalom Francis and Samuel Nicholls (Jan. 13) report—We have just returned from paying and setting our bargains. Our 20 fm. levels, east and west, are set at the price we last gave; our stope in the side of the 20 fm. level east, at 40s. per fathom; the stope over the 10 fm. level, from 10 to 20 fms. east of the engine-shaft, at 40s.; ditto stope, from 20 to 30 fms. east of ditto, at 45s. per fm.; this is on a lode running, as far as we have opened on it, north-east; ditto stope, from 30 to 40 fms. east of engine-shaft, at 38s., by four men; ditto stope, over ditto, at 42s. per fm. We have suspended our cross-cut east of the engine shaft, and have put the men in the rise, east of whim-shaft, to knock down some lode standing by the sides of the 10 fathom level for the present. We have done but little in the last month under the 10 fm. level, in consequence of frost; and over the 10 fm. level we have been hindered considerably. There is now a change of weather, and our water will be out from the 20 fm. level, if there is no frost between this and Tuesday next. Our cost for the past month will be about 100*l.*, and our ore broken about 7 to 8 tons, which we hope to be able to return, if the water is out on Tuesday, in a fortnight more. It is impossible to say with any degree of accuracy what we are likely to do in the coming month; but if there is no alteration, our returns ought to be in the next four weeks, 20 tons; that is our breakage of ore, and if we have a sufficient supply of water, we shall dress the greater part of it.

HOLMBUSH.—Capt. William Lean (Jan. 16) reports—The ground in cutting through the great cross-course, west of the diagonal shaft, in the 132 fm. level, is more favourable than it has been; the ground in the north cross-cut, in this level, is still favourable. The pitches in the 120 fm. level, east of Hitchens's shaft, are much the same as on setting-day, and the men earning fair wages in their tribute. The lode in the 120 fm. level south is 3 ft. wide, composed of prian, quartz, and stones of lead. The lode in the 110 fm. level south is 4 feet wide, composed of can, spotted throughout with lead, all of which is saved and dressed—ground still favourable; we are daily expecting to make the communication to the back of this level from the winze below the 100; in driving east, on the Flap-jack lode, in this level, we have intersected another small cross-course, dipping east, which has, for the present, disordered the lode; the ground is still favourable, and we hope and trust, ere long, to report having reached the great cross-course.

KIRKCUDBRIGHTSHIRE.—The agent (Jan. 13) reports—The lode in the 50 end has not reached the black ground yet, but seems near it, and is otherwise without change; the lode in the winze has also become unproductive this week; the ground is hard in it, which may be the cause; we hope it will change shortly. The 30 end east is still in black ground; and the lode in the 20 east is very kindly, but poor.

LAMERHOOE WHEAL MARIA.—Capt. J. Tabb (Jan. 17) reports—We have fixed our plunger lift in the engine-shaft, and shall resume sinking on Monday next. Set, as per bargain, from the 50 to the 60 fm. levels, and complete all the work at that depth for the sum of 180*l.* At Davey's shaft we have set, as per bargain, from the 40 to the 50 fm. levels for the sum of 180*l.* (the same as the engine-shaft); we hope to fix the 14-in. plunger in this shaft in a month hence.

LLWYNMALEES.—Capt. H. Francis (Jan. 13) reports—The London shaft is in capital ore. The winze (Oliver's winze) is in a fine lode, and the 14 fm. level west has the best lode in it that I have ever seen in this level; in fact I may say our prospects were never more flattering; every day's work appears to make a difference for the better, and should our shafts and level continue as they have for some time, we shall have one of the best mines in Cardiganshire.

MENDIP HILLS.—Capt. F. C. Harpur (Jan. 15) reports—The appearance of the lode, sinking below the 20 fm. level, continues without any alteration, being about 6 ft. wide, composed chiefly of flookan and spar, with stones of lead intermixed at times. In the slag department, we find the beds of stuff now opening through contain more slags than we have hitherto seen in this part of the valley; they also produce a large quantity of very good slimes. During the past few days we have extracted a tolerable good pile of slags, which I am pleased to say is of a better quality than we had for some time since; our last day's smelting gave rather more than 21 cwts. of lead.

SOUTH WHEAL TRELAWNY.—Captain W. Jenkin (Jan. 15) reports—The lode in the 30 fathom level, north of the shaft, is driven by six men; the lode is still disordered, with floors of elvan and hard capels; one part of the lode on the eastern side is 10 inches wide, composed of mundic, barytes, killas, spar, with spots of lead; we are also driving north on the same level, one sparry branch close by shaft; the branch is 8 in. wide, underlying about 2 ft. in a fm., composed of killas, mundic, flookan, and fluor-spar; ground a little harder than when last mentioned, still discharging a pretty deal of water.

TAMAR SILVER-LEAD.—Captain James Sprague (Jan. 15) reports—In driving south, in the 190 fm. level, there has been no lode broken since last reported on. In the 175 end the lode is 6 in. wide, work of a coarse quality. In the 160 end the lode is 2 feet wide, 6 in. of which is saving work. In the 145 end the lode is 2½ feet wide, and opening good tribute ground; in the winze, sinking below this level, the lode is 2 ft. wide, orey throughout, and producing work of a promising character. In the 135 end the lode is 1 foot wide, composed of mundic, can, and ore, yielding work of a profitable nature. At North Tamar, in the 80 fm. level we are still cross-cutting west; the ground is very hard for driving. In the 70 end south we are driving on the west part of the lode, which is 3½ ft. wide, composed of capel and can, with spots of ore. The tribute departments throughout both mines are improving. We sampled on Saturday, the 6th inst, computed 87 tons of rich silver-lead ores.

TRELEIGH CONSOLS.—Capt. W. Symons (January 13) reports—In the 113 fathom level, east of Garden's, the lode is about 3 feet wide, still producing stones of ore; in the 113, west of ditto, there is no alteration; there is but little done; we have been cutting a plat. In the 100, west of ditto, the lode is 1 ft. wide, producing a small quantity of ore. In the 90, east of east cross-cut, the lode is 15 in. wide, worth 3*l.* per fm.; in the winze, below the 90 east, the lode is 2½ ft. wide, not much mineral. In the 70, west of Garden's, the men are cutting open for a tram waggon—nothing done in the end; in the winze, below the 70 west, we are driving north from the rise, to cut the north part of the lode. In the 60, west of ditto, we have taken down the lode; it it worth but little for ore, it is 8 in. wide. In the cross-cut, south from Parent, we have driven 7 fms. 3 ft. from the shaft, and are expecting soon to see the lode; in the adit east, on the middle lode, three men are sinking the plat in the 70 fm. level, at Garden's, for a trip plat; we intend putting in a tram-road in this level, for the convenience of the 60 and 70 fm. levels.

WEST WHEAL JEWEL.—Capt. R. Johns (January 15) reports—In the 70 fm. level, west of Williams's cross-course, on Wheal Jewel lode, lode not taken down in the past week. In the 57 fm. level, west of Williams's cross-course, on the same lode, lode not taken down in the past week; in the 57 fm. level, east of Williams's cross-course, on the same lode, the lode, when last taken down, was worth 2*l.* per fm. In the 47 fm. level, west of ditto, on the same lode, the lode is worth 4*l.* per fm.; in the deep adit, west of Hodges's cross-course, on the same lode, the lode is producing stones of ore. In the rise, in the back of the 57 fm. level, west of William's cross-course, on the same lode, the lode is worth 4*l.* per fm. In 30 fm. level, west of Quarry shaft, on Tolcarne tin lode, the lode is 18 in. wide, producing stones of tin; in the deep adit, west of Quarry shaft, on the same lode, the lode is producing stones of tin; in the stopes, east of Pryor's winze, on Tolcarne tin lode, the lode is worth 10*l.* per fm. The stopes in the back of the 12 fm. level, west of Pryor's winze, are working on tribute, worth 18*l.* per fm.; the stopes in the bottom of this level are working on tribute, worth 18*l.* per fm.

WHEAL ANDERTON.—Capt. J. Carpenter (Jan. 17) reports—The engine-shaft will be to the 90 by the 26th inst. We have intersected the lode to the west of the cross course in the 70 fm. level, but not yet cut into it. We have also cut the eastern part of the cross-course in the 80 fm. level; therefore, we shall direct our course to get the lode to the west. We are getting into settled ground to the east of the slide, east of engine-shaft. The backs of the 70 and 80 fm. levels are producing a fair proportion of ore, so as to keep the quantity as heretofore, before we intersect the lode in the intended 90 fm. level.

WHEAL BENNY.—Captain J. Tabb (Jan. 17) reports—Nothing has been done at this mine, being obliged to have all the men to assist us at Lamerhooe, since I last wrote. At the Ford shaft the men will not resume driving before next week, the water being in, and it will take us until Monday next to draw it out, when I hope, in a week or fortnight from that time, to intersect Ford lode.

WHEAL TREHANE.—Capt. S. Richards (Jan. 15) reports—In the 55 fm. level north the lode is worth full ½ ton of lead per fm., and ground easy for driving; the stopes in the back of this level, both north and south of the cross-cut are turning out well. The lode in the 45 fathom level north is just the same as when last reported, producing some good stones of lead; the winze from the 35 is holed to this level, and we shall now commence stoping both north and south of the same, where the lode is worth 8 cwts. of lead per fm.; the lode in the stopes, in the back of this level south, is worth 6 cwts. of lead per fm. The stopes in the bottom of the 30 north are looking tolerably well; in the cross-cut west, in the 30, we continue to drive in clean killas ground.

WHEAL MARY ANN.—Capt. P. Clymo, jun., (Jan. 15) reports.—The lode in the rise, in the back of the 60 fm. level, under Barratt's shaft, is 2 ft. wide, and worth 10*l.* per fm.—this rise is 2 fms. above the level; here we have been hindered for the last week, being full of stuff, and not able to clear it; but it is now being done, when we shall again rise against the shaft. Barratt's shaft is sunk 5 fms. under the 40 fm. level, where the lode is 2 ft. wide, and worth 8*l.* per fm. The lode in the 40 fm. level, south of Barratt's shaft, is 4 ft. wide, and worth 7*l.* per fm. The stopes in the back of this level are yielding a fair quantity of lead. Pollard's shaft is sunk 3 fms. 2 ft. under the 40 fm. level. The lode in the 40 fm. level, north of Pollard's shaft, is 2½ ft. wide, and worth 10*l.* per fm.; the lode in the same level south is 1½ ft. wide, very kindly, composed of can and lead; the stope in the back of this level is looking well. The lode in the 30 fm. level, south of Pollard's shaft, is 5 ft. wide, and worth 5*l.* per fathom; the stope in the back of this level is looking well. The lode in the 15 fm. level, south of Pollard's shaft, is as last reported. We sold two parcels of lead ore, on Saturday last, No. 1, computed 60 tons, to the Tamar Smelting Company, at 16*l.* 3s. 0d. per ton; and No. 2, 20 tons, to Messrs. Mitchell and Son, at 7*l.* 7s. per ton.

WHEAL TRELAWNY.—Capt. J. Bryant (Jan. 16) reports—The lode in the 72 end, north of Phillips's, is 4 ft. wide, composed chiefly of can, with horn-spar, mundic, and lead, producing about 8 cwts. of ore per fm.; in this level the lode in the south end is 3 ft. wide, composed of horn-spar, can, and lead, producing about 15 cwts. of ore per fm. The lode in the 62 end north is 3 ft. wide, producing 1¼ ton of ore per fm.; there is no change of consequence in the south end in this level. The lode in the winze, sinking under this level, is 1 ft. wide, composed of can and lead, producing ½ ton of ore per fm. The stopes in the back of this level are somewhat improved since my last. The ground in sinking Trelawny's shaft, under the 52, is still hard, composed of compact blue elvan, with veins of carbonate of lime. The lode in the 52 end, north of this shaft, is 2 ft. wide, producing ¼ ton of ore per fm. The stopes in the back of this level are without any change of consequence. The stopes in the back of the 42 are producing but little ore at present. At the north mine, the lode in the 30 fm. end, north of Smith's, is 2 ft. wide, producing 8 cwts. of ore per fm. I cannot speak of any improvement in the pitches in the back of this level.

WHEAL TREMAYNE.—Capts. John Phillips and W. Blewett (Jan. 13) report—In the 50 fm. level, west of Maddren's shaft, on the south lode, the lode is 2½ ft. wide, producing good work for tin; we have set a pitch in the back of this level at 2s. 9d. in 1*l.* In the 50 fm. level, east of Maddren's shaft, the lode is 2 ft. wide, opening moderate tribute ground; we have opened in this level about 70 fms. of tin ground. In the 40 fm. level, west of Maddren's shaft, the lode is 1 ft. wide, producing a little tin, opening moderate tribute ground; in the 40 fm. level, east of the said shaft, the lode is 18 in. wide, opening moderate tribute ground work, at 7s. to 8s. in 1*l.*; we have opened in this level about 40 fms. of tin ground. The 30 fm. level, west of Field's shaft, is driven within 3 fms. of Wheal Margaret shaft; at present the lode is poor; we have driven this level through about 100 fms. of copper ore ground; and, for the last 60 fms., it will work at about 4s. in 1*l.*; we have about 3 fms. more to sink Wheal Margaret shaft to communicate to the 30 fathom level, which we hope will be done in the course of next week, or early in the week after; then we shall be prepared to set more tribute ground; one pitch has now been set at Wheal Margaret at 3s. in 1*l.* All the other parts of the mine are much the same as when last reported.

WHIDDEN.—Captain J. Kernick (January 15) reports—The sinking of Caunter's shaft I have suspended, in accordance with Mr. Murray's instructions; for how important soever the continuance of it may be, yet I agree that it is necessary to stop it at present, until we have finally arranged to have a sufficient flow of water to give power to our wheel to work the pumps, instead of the hitherto expensive mode of a hand lift, which at the present depth is getting ineffectual. In the meantime, I have put our men to cross-cut north from the shallow adit, and to sink from the old workings at the surface, in order to ascertain our true position regarding our adit levels, and these very extensive shallow in the hill above; for we doubtlessly must be in the vicinity of the lodes emanating from them. I am still more possessed in this opinion, since Mr. Henry Caunter has kindly shown me positions on the surface, to the north, of an old shallow adit and shafts connected therewith, filled up, or falling in, and overgrown with wood; but, amongst them, I have been able to detect the back of a very large lode.

FOREIGN MINES.

AUSTRALIAN MINING COMPANY.—The following reports were received yesterday, *viâ* Sydney:—

Tunghillo, Aug. 2.—Your note of the 4th July I received on the 10th. I could not visit the ground on which the person said he had found the mineral at that time, because of Allen's Creek survey. The survey here will be on Friday next. I have given the men employment here in the interim, and intend to visit the ground with him on Monday next, in my way to Rothschild, shortly after which I will forward you my report thereon. This mine is in an improving state. We have now discovered copper in the 40, or adit north, which is within 2 fms. of being under Good's winze. I cannot speak as to its value, as we have not taken down much of the lode, but hope to give a better account of it in my monthly report.—Alfred Phillips.—[Mr. Solly will give you a report of the mine, which I beg to confirm.]

Tunghillo Mines, Aug. 2.—I beg to acknowledge the receipt of your letter, enclosing the cheques for the wages, due on the 5th inst.; they are all quite correct. The mine, I am happy to say, is looking very favourable at present. The lode in Stephens's winze continues to yield about 18 in. of solid ore, and of very rich quality. Good's winze has improved within the last day or two; the ore has died out in sinking, dipping to the northward, but it has again appeared in the north end, about 15 in. wide, and of good quality. The 40 fm. level (north end) is now about 2 fms. from where Good's winze will come, and in it there are some good stones of ore—the end looking well, but hard. The other workings, on Baker's lode, are not productive at present; but the 30 fm. end north has a fine lode in it, though poor at present. The water is getting very strong in Anstey's shaft, and, consequently, the price is considerable, as the men are much employed pulling water. In Anstey's adit there is a large strong lode, with stones of ore through it, but not solid, and mixed with iron. Taking into consideration the promising look of the 40 fm. level, driving north, the reappearance of ore in Good's winze, and the continued productiveness of Stevens's winze, I consider the prospects of the mine are brighter now than ever, though the present raising of ore is not considerable.—B. F. Solly.

[From the *Plymouth Journal.*]

North Devon Wheal Rose.—Little has been done by the new company on this mine, but vigorous preparations are making for extensive workings.

Coombe (Buckfastleigh).—The sett to the east of this has been taken by a new company.

Kingsett.—This mine will be fully at work in a few weeks, the difficulties (or rather delays) in granting the lease having been overcome.

East Crowndale.—We have been advised of no alteration since our last.

Birch Tor Mines.—The cross-cut north has been driven about 7 fathoms in favourable ground. In the adit level, a rise has been made; but the lode is producing tin of about the same quality, and to about the same quantity, as at our last report. At Prideaux shaft there is a good shute of tin discovered. The shaft in the old Vitifer lode has been holed to the adit, and preparation is making to sink under this level.

Wheal Ash.—This course of mundic is, if possible, more solid than ever. The sinking under the 15 (beneath the adit) is progressing most favourably.

Wheal Franco.—In the pitches there is no change. The 47 fathom level is still disordered, and is 2 fms. behind the shute of ore in the 32 fm. level. In the 62 there is a decided improvement since our last.

Plymouth Wheal Yeoland.—There is no change here since our last.

Plymouth Wheal Yeoland East.—This arch of ground continues productive for about 18 inches in the lode—good work; and the remainder (8 or 9 ft.) is tinny.

Wheal Calstock.—The ground in the 50 fm. level west, driving on the course of the lode, is much improved for driving; the progress is now nearly 2 fms. per week in the capels of the lode, where good stones of ore and fluor-spar are met with; the men will commence cutting through the lode the middle of this week, not having seen the leader part of it for several fathoms. The ground is very favourable for driving in the 30 fm. level north. There is no alteration in the pitch on the other parts of the mine. In consequence of a report, industriously circulated, that the ore was poor, hungry, and of low quality, a sample has been assayed by Mr. John Harvey, of Liskeard, and produced 27¾, thus contradicting a report resulting from ignorance, or design.

Caradon Wheal Hooper.—In the 58 fm. level west the men are driving on a very large lode, spotted throughout with copper ore; this lode and the caunter will form a junction no great distance west in the granite. There is no alteration in the 58 fm. level south, or in the 50 fm. level.

ACCIDENTS.

Levant Mine.—A melancholy and fatal accident occurred at this mine, in the parish of St. Just, on Thursday last. A man named Rosewarne was employed filling the kibble in the 130 fathom level. The men at the surface, finding the kibble coming up empty, went down to ascertain the cause; Rosewarne's candle was lighting in the shaft plot in the level before-named, but at the bottom of the shaft, 90 fms. below, which depth he must have fallen, they found the poor fellow quite dead.—*Penzance Journal.*

Butterley Company, Heanor, Derbyshire.—W. Wright was killed by a quantity of bind falling from the roof of the pit in which he was working.

A Miner Underground for Seven Days.—A miner, named John Edwards, employed at the Plymouth-works, Merthyr, missed his way in coming out of the level on Tuesday evening, and was not heard of until Wednesday morning in the following week, when a party of his fellow-workmen went in search of him. They found him in some old workings. His feet were blistered by walking to and fro, endeavouring to find his way out, and he was in that dreary and unwholesome place, without having anything to eat or drink, for that long period. The poor fellow is in a fair way of recovery. We should state that he lost his light, and had no matches with him. Why not have such places closed up?—*Swansea Herald.*

Dowlais.—John Griffiths, aged nine years, died in consequence of a bar of iron going through a part of his body at the works.—A poor idiot boy, named David Davies, also died in consequence of having been burnt in the works.—Thomas Watkins, aged 16, was killed in one of the Plymouth levels, by a fall of stones from the top.—Thomas Williams, quarryman, died from injuries sustained at Cwmbargoed Pit.—*Ibid.*

Fatal Coal-Pit Accident, and Singular Preservation.—John Jenkins, and an intelligent little boy, named John Lewis, were employed at the Garth Colliery, Lansamlet, the former as a cutter of coal, and the boy to draw on the coal, in small waggons, on his hands and knees, from the heading into the main way, the vein being only about 2 feet wide. They were working in a heading, at some distance from the other colliers, when a sudden slip of coal, rubbish, and stones took place, covering both, the boy being about 2 yards nearer the mouth of the heading than Jenkins, who was killed. Fortunately for the boy, a large stone fell partly on the waggon, in such a way as to form a cave sufficiently large for his body. He says that he breathed freely—was not hurt by pressure, but he could not move. At the inquest on Jenkins, Lewis said he heard Jenkins ask if he could get out, and whether the pressure upon him was great, the boy replied that he could not get out, but that he was free from pressure. Deceased then said there was great weight on his head; no further conversation took place, but he heard the deceased pray. A second fall of earth took place, subsequently to which he did not hear the deceased's voice. Witness remained in this position until four o'clock the next morning, when Thomas Francis, the man who worked the "day turn," in the same heading, came to his work. He, with the assistance of other colliers, cleared away the rubbish, and released the boy. About two yards further on they found the deceased, who had evidently been dead for some time, probably by suffocation, the only perceptible injury being a slight bruise on the face.

Queen's Gardens, Wolverhampton.—J. Hammond received such severe injuries from a fall of roof, as to occasion his death, while working in a stone quarry.

TINCROFT MINES COMPANY.

At a general meeting of shareholders, held at the offices of the company, 45 Finsbury-square, on Friday, the 19th inst.—R. Hobson, Esq., in the chair,—

The advertisement convening the meeting having been read, the following report from the directors was submitted:—

DIRECTORS' REPORT.

At the last meeting, the directors stated that they were using their best exertions to improve the then position of this important property: those exertions have been most anxiously continued to the present time, the result of which they feel confident will be equally satisfactory to you as pleasing to themselves, notwithstanding the great depression of the market value of the produce of the mine, which has embraced the whole of the past year. The directors take this opportunity to inform you, that in the early part of the last year, they entered into negociations for a renewal of the grant (lease), from the Hon. Mrs. Agar, and a modification of the dues, the result of which was, that a new lease for 21 years, from the 1st July last, has been granted on the following conditions: after stating those usual in leases of this kind, it is conditioned, that for the first year the grantees shall be excused all dues or royalty this concession may amount to—say, about 1600*l.*; after which the dues or royalty is to be 1-24th part of all ores raised at or about the 140 fm. level, as heretofore; but, under that (140 fm. level) 1-30th part; this negociation, so creditable to the Hon. Mrs. Agar and her agents, and so liberal on their part, the directors feel pleasure in acknowledging to their fellow shareholders. The mine was worked poor, but by this liberal conduct, the directors were, in every way possible, bound to use every exertion on their part to place it, if possible, in a better position: they are happy to tell you they have succeeded beyond their hoped-for expectations. The thanks of the proprietors are due to Mrs. Agar, and you will not be backward in paying those thanks; and the directors feel pleasure in stating their opinion, that the present position of the mine is such, as to give assurance that that lady's liberality will be richly rewarded by the large share of future dues, of which the mine not only gives promise, but absolute assurance; the directors engaging to do certain work, recommended by Captain Puckey, who had been called in by both parties to inspect, report, and recommend; the result, so far as yet seen, is successful.

In the contemplated carrying on of these operations, and putting the mine into the effective state it now is, the directors contemplated being obliged to call up further capital; though at one time they much needed it, they refrained from seeking it directly from the proprietors, on a confident assurance from the deputation from their body, who at that time visited the property, and representations from the agent, that the pressure would be but temporary; it is, therefore, now the more satisfactory that they are enabled to say, that the returns from the mine, the large reserves of ore in sight, and the general prospects held out by the ground now in course of development (as will be more particularly referred to in Capt. Floyd's report), renders such call unnecessary, they individually hold their large interest in the most confident assurance of very shortly receiving regular and ample dividends. The directors beg to state to their fellow-shareholders, that their attention has been, as it needed to have been, unremitting in working against the effects of the most untoward year for mining operations, and which, in fact, has been the cause of their inability to pay even one dividend, they would not consent to raise ores to sell at so ruinous a price. Two of their body have several times visited the mines; and, by their presence, have given that confidence to their agents in their operations which have led to the satisfactory results, shown more fully in the tabular statements of ore ground laid open, and the value of both tin and copper ore discovered. The report of Capt. Floyd needs no comment further from the directors than this—that they have found him zealous, indefatigable, and perseveringly intent on doing his duty; and that they have confidence in his having under, rather than over, stated the present position of the mine. The tabular statement referred to, and which is now submitted for your information, and which will be open here at all times for the inspection of the shareholders, shows the extent of ore ground opened in every level, and respectively in each level, together with its value in each level, being in the aggregate—Value of tin, 41,790*l.*; value of copper, 12,720*l.*=54,510*l.*

Reference has been slightly made to the unprecedented low prices obtained for the ores, both tin and copper, which have prevailed during the past year; the directors do not hesitate to tell you, that such have been much lower than they ought to have been, judging from the price obtained by the smelters for the metals. The price of tin has somewhat improved, but not in that fair proportion between the ore and the metal, which the miner has a fair, equitable, and honest right to, else this mine has, even in the past year, produced sufficient for dividends, over and above its cost.

The price of copper ore is still lamentably below its intrinsic value; this, however, is a matter the directors cannot at present tackle; but, with regard to the tin ores, it is not intended tamely to submit to the wanton and arbitrary dictation of the smelters. The Tincroft shareholders cannot be ignorant of the position the Tamar Mines were placed in some years ago, when they failed in obtaining two-thirds of the fair value of their silver-lead ores. At the suggestion of Mr. Johnson, backed by the directors, they determined to smelt their own ores: the result and profit are familiar to most of you, so is it to the directors, at least so far as regards your tin ores; and they, after mature consideration, have concluded to smelt the tin ores, and invite you to participate with them; at least, they give you the option of so doing. The proposed tin smelting company, emanating from this, will consist of 5000 shares, 3000 of these shares will be reserved for the shareholders of this mine, and the remaining 2000 shares will be equally divided among the shareholders in the Lewis and Drake Walls Tin Mines.

[Capt. Floyd's report was here read, which will be given in our next week's Journal.]

Gentlemen, you have now heard read the report of Capt. Floyd, which cannot fail to be gratifying to you all; yet, notwithstanding its great encouragement, and the flattering expectations held out to you, the directors have a still more satisfactory communication to make to you, which is, that by a letter they received yesterday from the mine, they are assured that had the agents consulted only their own opinions of the prospects of the mine, the report of Capt. Floyd would have been more favourable than it is; but that they thought it the better course to rather underrate the very flattering prospects before them, in order that at the next meeting they may have (to use their own words) substantially great good to report. The profit upon the working for Nov. will be about 350*l.*

Statement of Accounts for Twelve Months, ending October, 1848.

Total amount of cost from November to October		£27,086 12 1	
London expenses, including directors' attendances, auditing, &c.		533 18 10	
Total		£27,620 10 11	
Balance from last account		£ 1,412 3 4	
Copper ore	£13,514 16 0		
Tin ditto	12,054 9 5		
Arsenic ditto	377 2 10		
Old materials	51 5 4	—25,997 13 7	
Balance		210 14 0	
Total		£27,620 10 11	

Against this balance, there is an article of subsist, amounting to 161*l.* 10s., reducing the balance to 49*l.* 4s.

The Chairman then stated, that considerable advantage had been derived by the company from the change of local management—as an instance of which, he would mention, that one piece of ground, esteemed valueless by the late agent, was estimated by Captain Floyd, in the tabular statement submitted, at 23,000*l.* in value, this ground being between the 120 and 142 fathom levels; and the same run of ground, in another direction, was set down as worth 6000*l.*, the length being 100 fms., 18 fms. deep, worth 18*l.* per fathom. This tabular and substantial statement was not a baseless estimation or calculation, but founded upon absolute measurement—Capt. Floyd having actually measured the ground, and, in many cases, where there was the slightest reason to be dubious, no estimation of ground had been made. It would be seen that the resources of the mine were very considerable, from the facts here stated—one small place producing ore worth 35*l.* per ton, which he would value at least at 5000*l.*; indeed, it might have realised by sale 10,000*l.*; and it must be borne in mind, that no additional machinery was required to bring into service the resources here described.

Mr. P. N. Johnson laid before the meeting several specimens of the ores alluded to by the chairman, and described their locality and rich quality.

The Chairman wished to draw the attention of the meeting to that part of the agent's report, as to sinking Blight's shaft, concerning the position of which he would merely mention the fact, that in the adjoining mine the same lode was absolutely 60 ft. wide, having returned to the adventurers hundreds of thousands. Upon this lode, in these mines, the most encouraging indications existed, although no estimate of its resources had been made in valuing the ore ground opened.

Mr. P. N. Johnson expressed a confident opinion, that the sinking of Blight's shaft would be attended with much benefit to the shareholders.

A question, as to making up the accounts and holding quarterly meetings, was then discussed, to which no importance, apparently, was attached by the meeting; it appearing that the accounts were made up with regularity and order every three months, and open for the inspection of the shareholders, and that considerable inconvenience and unnecessary occupation of time would be involved by the proposed measure.

After some questions and remarks of a general nature, by Messrs. Fisher, Young, James, and Mackay, the question was left in the hands of the directors.

Mr. L. Iselin remarked that, in his capacity as auditor, he had examined the accounts most carefully, and nothing could exceed in accuracy the lucid manner in which they were kept.

The Chairman would now call the attention of the meeting to that part of the director's report in which reference was made to the subject of smelting the produce of their mines. The importance of this question they could all appreciate, their interest having suffered materially from the iniquitious influence of the tin smelting monopoly. He would now read that part of the report alluded to; from this it would be seen that the proprietors of this company would have a preference to the extent of 3000 shares out of the 5000 shares, by which the proposed establishment would be constructed. They would, of course, in this undertaking have the benefit of Mr. Johnson's scientific and able superintendence. It was not desirable to enter fully into all particulars; suffice it to say, that they had fully deliberated upon all the matters incidental to this enterprise. They had already made advantageous arrangements for a supply of ore. They had selected a locality offering peculiar advantages—those of smelting he would not dwell upon; but all the shareholders had now an opportunity of participating in its benefits.

Some questions were then put by Messrs. Lindo, James, Barclay, and others, relative to the constitution of the company, and a resolution, as inserted in our advertising columns relative thereto, was unanimously passed.

South Wheal Frances.—At a meeting of adventurers, held on the 18th inst., the statement of accounts for October and November was presented, showing—Balance in hand end of Sept., 644*l.* 13s.; ores sold Oct. 5, 2294*l.* 15s.; ditto November 2, 1095*l.* 7s. 10d.=4034*l.* 15s. 10d.—Labour cost for October, 560*l.* 9s. 10d.; ditto Nov., 599*l.* 10s. 7d.; merchants' bills, 685*l.* 7s. 9d.; dues, 226*l.* 0s. 2d.; gratuity to Mr. Thomas, 50*l.*=2101*l.* 8s. 4d.—By dividend of 10*l.* per share, 1240*l.*; leaving balance now in hand, 693*l.* 7s. 6d.—The profit for the two months amounted to 1288*l.* 4s. 6d.

GREAT POLGOOTH MINING COMPANY.

A meeting of adventurers was held, at their London offices, 38, New Broad-street, on Monday, the 15th inst., when the finance committee laid their accounts for the last two months before the adventurers, showing—

Dr.—Paid in Dec. and Jan., cost of Oct. and Nov.—Wages & incidentals	£2584	18	3
Carriage and horse work	248	1	7
Coals	415	0	0
Materials and stores	525	0	0
Rates, rents, dues, &c.	252	2	7
Total	£4024	19	5
Cr.—Tin sold in Dec. and Jan. (106 tons 8 cwts. 1 qr. 22 lbs.)	£4556	18	11
Sundries	33	2	10
Total	£4590	1	9
Showing profit of	£565	2	4

A dividend of 2*l.* per share was declared, leaving 53*l.* 2s. 4d. to credit of profit account for the March meeting, with assurance of continued progressive improvement in the mine.

WEST WHEAL PROVIDENCE MINING COMPANY.

At a meeting of adventurers, held at the mine, on the 10th inst., a statement of accounts was presented, showing—Labour cost for Sept., Oct., and Nov., 546*l.* 10s. 6d.; merchants' bills, 91*l.* 18s. 5d.=638*l.* 8s. 11d.—Sale of black tin and copper ores, 1246*l.* 10s. 7d.—(less dues, at 1-18th, 69*l.* 5s.)=1177*l.* 5s. 7d.; add balance end of August, 14*l.* 9s. 8d.=1191*l.* 15s. 3d.—By dividend of 2*l.* per share, now declared, 512*l.*—leaves balance in hand, 41*l.* 6s. 4d. The dividend of 2*l.* per share was agreed to, and the purser's salary increased to 5*l.* 5s. per month, and the agent's to 7*l.* 7s. per month.

The following report, from Capt. R. Polglase, was read to the meeting:—

January 16.—Operations during the last three months—viz.: the 50 fathom level has been driven south (east of Michell's shaft), and intersected Tremayne south lode, on which we have extended 7 fms., averaging 18 in. wide, that will be wrought at 5s. in 1*l.*, being considerably improved from the level above. We suspended the 50 fm. level, west of Michell's shaft, until the Wheal Tremayne level came in to carry off our water, which is now effected, and the end is resumed; but the lode is now disordered by a cross-course. St. Aubyn's shaft is sunk within 5 fms. of the 20 fm. level. We have 20 men working in the 50 fm. level, three driving the western end at 30s. per fm., six men stoping the back at 15s. per fm., seven at 25s. per fm., and four sinking a winze under this level, at 25s. per fm.; which, for 40 fms. in length, will average 8*l.* per fm. In the 40 fm. level, there are three pitches working at 9s. 6d., and one at 10s. in 1*l.* In the 35 fm. level, there are three pitches working at 11s. 6d., and one at 12s. in 1*l.*

Consolidated Mines.—A meeting of adventurers in these mines took place at the account-house, on Wednesday last, when the accounts for November and December, of which the following is an abstract, were passed:—By balance from last account, 1644*l.* 11s. 7d.; ores sold (less dues), 7258*l.* 17s. 10d. = 8903*l.* 9s. 5d.—To costs and merchants' bills, 7907*l.* 4s. 4d.—leaving balance in favour of the adventurers, 996*l.* 5s. 1d.

South Roskear.—Statement of accounts presented at the meeting held on the 16th Jan.:—Oct. and Nov. labour cost, 785*l.* 19s. 6d.; merchants' bills, 357*l.* 17s. 7d. = 1143*l.* 17s. 1d.—Ores sold Nov. 2, 918*l.* 14s. 5d; debts received Jan. 6, 22*l.* 19s. = 941*l.* 13s. 5d.: balance of loss, 202*l.* 3s. 8d.

Wheal Fortescue.—At a meeting of adventurers, held at the mining offices, Tavistock, on Wednesday, the 17th inst., John Randle, Esq., in the chair, the proceedings of the last meeting having been read, and the question of the proper point for a cross-cut to the lode considered, it was resolved—That it is the opinion of this meeting, that the engine-shaft be continued sinking, as at present, until it reach the 40 fm. level, under the adit.

Wheal Maria (tin) Mining Company.—At a meeting of the adventurers held at Crotch's hotel, Hayle, on the 29th Dec., a statement of accounts was presented, showing a balance against the mine of 132*l.* 2s. 10d.; when it was resolved that the materials be sold as early as possible, and that the purser takes the necessary legal proceedings for the recovery of all arrears of calls.

Abergwessin Silver-Lead Mines, South Wales—(*From a Correspondent*).—Several of the principal shareholders in this company again regaled their workpeople, on New Year's Day, with beef, plum-pudding, and ale. About 30 to 40 sat down to dinner, and spent a happy day according to the good old English custom, thereby showing a cordial feeling between master and men. After the healths of the Queen, Prince Albert (a brother miner), and the Prince of Wales, were given, success and prosperity to the undertaking, and several other toasts, appropriate to the occasion, were drank, and the party passed a convivial evening. This company, which has laid out several thousand pounds in exploring the resources of their mineral property, are nearly realising their expectations. They have sunk 72 yards under the base of the two lofty mountains through which the veins of ore run; and they are within two yards of the depth at present intended to be sunk. In their operations, they have gone through fine courses of ore in the levels above, and will, in two yards more cut the veins. They are now erecting a water-power engine for pumping the water; also a water-power engine for crushing and cleaning the ores; all the machinery of which is on the mine, and in course of erection, which will put the mine in full course of working in the ensuing spring, when, no doubt, this persevering company will reap a rich reward.

Brazils.—By the arrival of the *Swordfish*, at Liverpool, yesterday, dates have been received from Rio Janeiro to the 28th of Nov.; Bahia, Dec. 18; and Pernambuco, Dec. 23. From the two former ports there is nothing of moment; but at the latter place intelligence had been received, that the insurrection had been completely crushed, through the activity of Gen. Coilho.—[We shall endeavour to give our dispatches in a second edition.]

Papers from Bogota, New Granada, have come to hand as late as the 12th of November. The Senate and Chamber had decreed a series of alterations in the laws regulating importations; and, among other essential changes, had stipulated that gold, silver, and platina, whether in the shape of dust, bullion, or coin, might be received into the Republic free of duty. Agricultural implements and machinery for the manufacture of sugar, or the cleaning of coffee, or such as are essential for the erection of saw-mills, or exploration of mines, &c., would be admitted on the same favourable terms; and the decree altogether manifests a tendency to encourage, on sound and liberal principles, the external trade of the State. The Government were busily occupied with renewing and extending contracts connected with their salt revenues, and the organisation of roads and other facilities for internal transit, were not neglected.—*Times.*

Teversham v. Cameron Coalbrook Steam Coal and Swansea and Loughor Railway Company.—In the Vice-Chancellor's Court, yesterday, Mr. Russell and Mr. W. W. Cooper appeared in support of a demurrer to the bill in this case, on the ground of equity. The plaintiffs, three of the directors of the company, as it was alleged, had agreed to make advances to the defendants, who were the company. After a certain time they ceased doing so, and they now filed their bill for an account, and for the specific performance of the contract. It was argued, in support of the demurrer, that the contract was void under the 29th section of the Registration Act, which provides, that if any contract, or dealing, shall be entered into, in which any director shall be interested, then the terms of such contract, or dealing, shall be submitted to the next general or special meeting of the shareholders, to be summoned for that purpose, and that no such contract shall have force until approved of, and confirmed by the majority of votes of the shareholders present at such meeting.—Mr. Swanston and Mr. Prendergast were heard in support of the bill, and contended that the case was not within the prohibitory clause of the Registration Act, and that the plaintiffs were, at all events, entitled to an account.—His Honour was of opinion that the bill was vitally affected by the 29th section, and, that being so, there was no case for any account, or any other relief. He allowed the demurrer, giving liberty to amend, and reserving the costs.

Cornwall Railway.—On Wednesday the experiments undertaken by Mr. Brunel, at the instance of the Admiralty, for carrying the railway bridge across at Saltash, were brought to a successful close. For the purpose two old gun brigs, purchased of the Government, were moored over the spot, and a wrought-iron cylinder, ½ inch boiler plates, strongly rivetted together, 85 feet and 6 feet diameter, and of 28 tons weight, was sunk *in profundis*. The necessary apparatus for pumping out the water was then applied, and the experimenters, who afterwards descended to the bottom of the cylinder, had the satisfaction of finding that at 11 or 12 feet below the mud, there was a foundation of solid rock for the piers. The bridge will be of large dimensions, the Admiralty requiring that it shall have a clear width of 300 feet between the piers, and a clear height of 180 ft. above high-water mark. Over it will pass the entire passenger traffic from Plymouth to the Land's End.

CORNISH STEAM-ENGINES.

The number of pumping-engines reported for the month of Dec. is 25—the quantity of coals consumed being 1923 tons, lifting, in the aggregate, 17,000,000 tons of water 10 fathoms high—the average duty of the whole is, therefore, 50,000,000 lbs. lifted 1 foot high by the consumption of a bushel of coal.—The following have exceeded the average:—

Mines.	Engines.	Length of stroke	Load in pounds.	Load per sq. inch on pist.	Strokes per min.	Con-sump. of coal in bus.	Million lbs. lifted 1 foot by consump. of 1 bush. coal	Lifted 1 ft. by 1 cwt. of coal.
Great Work ..	Leeds's 60-in.	9·0	41,820	11·5	7·9	1972	52·4	62
East W. Crofty	Trevenson's 80	10·33	80,938	12·0	5·7	2432	59·8	71
East Pool	60-inch........	9·75	37,481	10·8	4·8	1152	50·7	68
Carn Brea....	76-inch........	9·0	83,166	14·2	4·3	1859	54·8	65
Poldice	85-inch........	10·0	75,563	9·3	7·8	3128	53·6	63
South Frances	75-inch........	11·0	32,770	6·1	6·0	1296	54·9	65
United Mines	Cardoza's 90-in.	9·0	99,468	13·7	7·2	3820	59·7	71
Ditto	Eldon's 30-inch	9·0	13,631	16·0	6·9	486	59·0	70
Ditto	Loam's 85-inch	10·0	89,320	11·8	7·2	3548	53·2	63
Ditto	Hocking's 85-in	10·0	99,093	14·6	7·2	4194	58·3	69
Tywarnhayle..	Gardiner's 80in.	10·0	69,527	11·0	6·9	2808	55·6	66
East Wh. Rose	Penrose's 70 in.	10·0	59,490	13·9	4·1	1269	70·0	83
Ditto	Michell's 70-in.	10·0	64,025	14·9	3·6	1116	75·3	90
Ditto	Purser's 56-in.	10·33	38,479	12·2	2·7	656	52·2	62

CURRENT PRICE OF GOLD AND SILVER.

Foreign gold, in bars .... per oz.	£3	17	9	New dollars .... per oz.	£0	4	10
„ Portugal pieces....	0	0	0	Silver in bars (standard)	0	4	11½

EAST WHEAL FRIENDSHIP MINING COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—Being a reader of your paper, and having noticed the candid manner in which all matters relative to the mining interest are laid before the public, I am assured you will not refuse the following a space in your columns. In the spring of last year several advertisements appeared of a company about to be formed, termed the East Wheal Friendship Mining Company, for the purpose of developing the resources of that mine; this speculation received at your hands a strong recommendation, and upon the best authority; but as it is not to the productiveness or non-productiveness of the mine I am about to refer, it is unnecessary I should make any further allusion to it; I will, therefore, merely add, that for consecutive weeks shares were reported to have been sold, and on one occasion it was stated that operations would shortly commence—the shares were then quoted at a premium; I imagine from this report, and from the fact that a lode had been discovered near the boundary of an adjacent mine in immediate connection with this. About this period I purchased a few shares in this speculation; some months afterwards I applied to the purser to give me an idea when the working of the mine would commence. I found a party was in treaty for the remainder of the shares; that in the event of their being disposed of, a greater amount of labour would be employed in the mine, intimating that it was not exactly in a dormant state. Three months after I made another inquiry, which was not responded to, nor have I heard, from first to last, a syllable as to the financial position of the company. I now find that its name has been removed from your share list, that the speculation is virtually, if not absolutely, defunct; the shareholders are, therefore, left to dream, guess, or imagine, what has become of the amount received for shares sold: as in the absence of any information on the subject, and the removal of the name from the list, it is certain that nothing was laid out on the mine, but that the only expenditure incurred was in giving publicity to the scheme; this conclusion is also strengthened by its progress never having been reported in your paper. I am unacquainted with the usages and customs of mining speculations; I unhesitatingly declare my entire ignorance of them; but, as a man of business, I am quite convinced the adventurers have an undoubted right to a knowledge of the manner in which their fund was expended. If not, there is no room for complaint, and it would be better that the public, unacquainted with mining speculations, should be perfectly aware, that in this particular interest such an anomaly exists; indeed, it cannot be too clearly defined, as it would evidently place those parties who undertake the formation of a company in an irresponsible position. From the vigilant and zealous manner in which you protect the interests of the adventurer, I am convinced you will not refuse publicity to the foregoing, as it contains a question important alike to the shareholder, and to the popularity of mining enterprise.—An Adventurer: *Salisbury, Jan.* 17.

SOUTH WHEAL MARIA.

Sir,—Having, within the last week, visited South Maria Mine, my opinion, as expressed through your Journal before, is confirmed—that South Maria is the most promising new mine I know, and have no doubt but the adventurers now are near the spot which I always thought would give them returns, or a course of ore. The great south lode is a master vein, and of such a character, as seen in several shallow places, which any unprejudiced miner would pronounce for a certainty, if driven on to some extent, to prove a paying lode. The driving as yet has been but little—say, 6 fathoms in hard ground—which contained a bunchy sprinkling of rich ore; but is now changed into a rich-looking soft killas, mixed with peach, mundic, &c., and carries a healthy flookan on the north wall. The quantity of ore is increased throughout, and of excellent quality; and, on the whole, to a miner, bespeaks the near approach to something better, or breaking the shell of a good deposit. The eastern end is now, I think, but a few feet from the heave by caunter, and I doubt not but improvement will follow the pick to the heave; but in the part of the lode east of the caunter, I do most decidedly expect a course of ore, and that the lode will be productive from this caunter to the river, adjoining the Great Maria sett—it having been cut so good shallow in that direction.

Let not the South Maria adventurers be discouraged—they have done much heavy and dead work in cross-cutting the country 100 fms.; but they have arrived at their destined spot; and now let them push on, to prove the south lode. Much has been said about their machinery. Men often say that which best answers their purpose; and, should they be fortunate enough to have a white jacket placed on their backs, too frequently consider the importance of the colour of their badge, rather than a proper qualification necessarily existing under their cap—hence so much gratuitous opinion without experience. I am much mistaken, if South Maria water-wheel will not keep three times the quantity of water now coming from four lodes; and have no doubt, even with the present small double lift, of its putting the mine, if required, 20 fathoms deeper. Let the South Maria adventurers continue to try this lode in the 30 with the wheel, and only erect a steam-engine when they want it. I congratulate them on having persevering, economical, and something like invincible agents; for I think they have waded through difficulties, and kept the mine at work, in a way but few would have done. These few remarks emanate from an unknown pen to the agents, or adventurers, which is employed by one neither paid nor hired for the occasion. I have not, or ever had, any doubt of South Maria becoming a rich mine; and, should the present company grow weary, others will gladly take it up.—A Miner: *Plymouth, Jan.* 17.

THE CARADON DISTRICT.

Sir,—In perusing your valuable columns, for many weeks past, I have been much pleased with the account given by your correspondent, J. Y. Watson, Esq., respecting the different mining districts in Cornwall. I have found what he has said to be invariably interesting and amusing to me, as a miner; but let me tell that gentleman, that there is a grand mistake in the statement given for the Caradon district. It is there said, that out of all the lot of new mines set to work here, one only has made any return of ore. I beg to inform Mr. Watson, that this is an error—Wheal Ager having returned about 200*l.* worth, and is still producing copper ore, there being some men employed in her on tribute, who are at this time preparing a parcel of ore for the market; the Caradon, too, has returned many tons; and Caradon Consols, although abandoned, likewise returned some tons of very good ore, and ought to have had a further trial. I think, if Caradon Copper Mine was only 10 fms. deeper, the owners would shortly be in a position to return from her hundreds of tons; I never saw a lode more improved in 10 fathoms sinking than the north lode they are working on in the 30 fm. level. There are many other lodes to the north of the one before alluded to, in this sett, that have a kindly appearance, which, I think, will turn out thousands of tons of copper if they are fairly developed. There are many beautiful cross-courses passing through this sett, in nearly all of which the lodes have been found to be the most productive, both in South and West Caradon. My opinion is, that this district abounds in tin and copper; and many of the now abandoned mines will yet be again resumed, and become profitable speculations to those who may embark in them. The only thing wanted here is money; for the want of this many have gone so far, and have been obliged to give up, and lost all they have laid out, when the mines were on the most important point of speculation, and, with a little more outlay, would have paid for all that had been expended, and returned large profits.

St. Cleer, Jan. 16. John Seymour.

UNITED MEXICAN MINING ASSOCIATION.

Sir,—In your Journal of last week, you stated that this company had paid off borrowed capital and dividends equal to 1s. per share per annum. Now, for argument sake, supposing all the shares created at various times to have existed in 1824, this company will have paid off a sum equal to 5s. per share; but, taking from the year 1840, when the tide of prosperity turned in its favour, they have paid equal to 10s. per share.—X. Y.: *London, Jan.* 19.

CWM ERFIN MINE.

Sir,—In answer to the questions in your Journal of Saturday last, respecting this mine, I have to inform you, that the mine is now in a good state of working, as the settings published to-day will show; and I hope, before the end of this year, to give a dividend to the shareholders. The highest price at which the shares have been saleable, to my knowledge, has been 4*l.*, the present price.—T. P. Thomas, Purser: 3, *George-yard, Lombard-street, Jan.* 19.

The Copper-trade—(*From a Correspondent*).—The smelters are making great efforts to enter into arrangements for securing to themselves the purchase of the Australian copper ore, immediately on its reaching this county, in order to prevent competitors having any advantage from private transactions, and to compel them to go to the Swansea 'ticketings' for their whole supply. The importers had better not enter into any such contract, or they will eventually suffer for it.

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Bate's West Hartley 14 6—Buddle's West Hartley 14 9—Dean's Primrose 14 6—East Adair's Main 13—Jonassohn's Hartley 14 6—New Tanfield 13 6—North Percy Hartley 14 6—Ravensworth's West Hartley 14 6—Tanfield Moor 14 6—Tanfield Moor Butes 13 6—Wall's End Denison 16 6—Anthracite 24—Derwentwater Hartley 14 6—Llangennach 22 6.—Ships at market, 270; sold, 60.

WEDNESDAY.—Carr's Hartley 14 6—Chester Main 14 6—East Adair's Main, 12 9—New Tanfield 13 6—Tanfield Moor 14 6—Walker's Primrose 11 6—Wall's End Hedley 14 3—Hilda 14 6—Belmont 15 6—Braddyll's Hetton 16—Morrison 14 3—Shotton 15 6—Stewart's 16 6—Kelloe 16—Adelaide Tees 16—Seymour Tees 16—Anthracite 24—Cowpen Hartley 14 9—Hartley 14—Llangennach 22 6.—Ships, 244; sold, 42.

FRIDAY—Chester Main 14—Holywell Main 15—New Tanfield 13—Ord's Redheugh 12 6—Tanfield Moor 13 6—Wylam 13—Wall's End Hotspur 14—Heaton 14 3—Harton 14 3—Eden Main 15 3—Lambton Primrose 15 3—Braddyll's Hetton 15 6—Bell 14 6—East Hetton 14—Hetton 16 6—Haswell 16 9—Lambton 16—Russel's Hetton 16—Benson 14 3—Hartlepool 16 6—Kelloe 15—Tees 16 3—Cowpen Hartley 14 9—Sidney's Hartley 14 9.—Ships at market 278; Sold 84.

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning Eleven o'clock.

Bank Stock, 7 per Cent., 189 90	Belgian, 4½ per Cent., 79
3 per Cent. Reduced Ann., 90 89¾ 90	Dutch, 2½ per Cent., 49¾
3 per Cent. Consols Ann., 90 89¾ ¾	Brazilian, 5 per Cent., 78
3¼ per Cent. Ann., 90¾ ¾	Chilian, 6 per Cent., 90
Long Annuities, 8¾	Mexican 5 per Cent., 26¾
India Stock, 10½ per Cent., 238 9	Russian, 5 per Cent., 103½
3 per Cent. Consols for Acc. 90 89¾	Spanish, 5 per Cent, 15¼ ¾
Exchequer Bills, 1000*l.* 2d. 48 46 pm.	Ditto 3 per Cent., 28¾ ¾

Mines.—The amount of business transacted during the week in the mining share market has not been equal to our expectations; yet the prospect before us is encouraging. We have buyers, but sellers are not in proportion. Our tin mines, which a few months since kept back their produce for better prices, are now realising the advance—making profits and paying dividends, and the advance which has taken place this week will enhance their value. Lead mines are generally looking well, and, in several, improvements have been made; and were we to have the advance on the standard which rumour indicates, we may consider then that the mining interest will prove flourishing indeed.

In the lead mines of Wales a great many shares have changed hands, and we find buyers at advanced prices; the mines there generally are looking well.

Bargains have been done in Devon Great Consols, and inquiries are being made for East Wheal Rose and South Wheal Frances, at former quotations.

Shares in the following mines have changed hands during the week:—Devon Great Consols, East Wheal Rose, Wheal Trehane, Wheal Trelawny, Tamar Consols, East Tamar, Tincroft, Mendip Hills, Wellington Mines, Cwm Erfin, Esgair Llee, East Crowndale, Wheal Ash, &c.

At the Great Polgooth meeting, on Monday last, a dividend of 2*l.* per share was declared for the months of October and November. There was a profit of 556*l.* 2s. 4d. on the two months' working; and, after payment of the dividend, a credit of 53*l.* 2s. 4d. is carried to the next account. The tin raised in that period amounted to 106 tons, realising 4556*l.* 18s. 11d., and the prospects of the mine fully warranted the assurance of a continued progressive improvement.

At the West Wheal Providence meeting, on the 10th, a dividend of 2*l.* per share was declared on Sept., Oct., and Nov. workings, leaving a balance of 41*l.* 6s. 4d. in hand. The sales of copper and tin realised (less dues) 1177*l.* 5s. 7d. The mine is represented in a very favourable position, and the tributers realising average wages in the respective pitches.

At the South Wheal Frances meeting, on the 8th, the accounts for Oct. and November were audited, and a dividend of 10*l.* per share was declared. The profits for the two months were 1288*l.* 4s. 5d., and a balance of 693*l.* 7s. 6d. was carried to the credit of the next account, being about 50*l.* over the previous one. The ores sold during that period realised 3390*l.* The agent's report of the mine was highly satisfactory, but the standard was severely felt. We learn that by the next account they will have from 900*l.* to 1000*l.* worth of tin.

At the Consolidated meeting, on Wednesday last, the accounts for Nov. and Dec. were passed, showing a balance in favour of adventurers of 996*l.* 5s. 1d.

At the Tamar Consolidated Mining and Smelting Company's meeting, on Thursday, a dividend of six shillings per share was declared, being 10 per cent. on the paid-up capital of the company. The mines, we learn, have considerably improved, and are making a monthly profit of about 300*l.* The smelting department, under the direct superintendence of Mr. P. N. Johnson, is working in a manner highly satisfactory to the proprietors, and meritorious to himself and the directors.

At the Tincroft Mining Company's annual meeting, yesterday (Friday), the balance sheet showed a far more favourable statement than could have been expected, from the depressed state of the standard for copper ores, and the extended system of working adopted; but the advance of late on the price of tin has partially met the increased expenditure involved in such working, whilst the recent, but positive, improvements coming in with the new year, open to the shareholders a most cheering and gratifying prospect. The financial statement for the year shows the returns for copper ore, 13,514*l.* 16s.; for tin, 12,054*l.* 9s. 1d.; for arsenic, 377*l.* 2s. 10d., with old materials sold, 51*l.* 5s. 4d.; total, 27,409*l.* 16s. 11d., presenting a balance of 210*l.* 14s. against the mine. November subsist of 161*l.* 10s., having been paid, reduces that balance to 49*l.* 4d. The agent's report of the mine is highly encouraging; and by a tabular statement of the underground operations, we find, from the extent of levels driven, and ground laid open, it is estimated that upwards of 54,500*l.* worth of ores are already developed. This interesting *fact*, and the several documents submitted unreservedly to the shareholders, with the carefully finished report of the agent, afford a substantial proof of the company's prosperous condition. An advance of 4*l.* per ton, has taken place on tin.

By letters recently arrived from Rio, we learn that an American Government steamer had arrived there on her way to San Francisco, for the purpose of laying an embargo on the gold brought from the interior, until the arrangements for the establishment of a mint, when a duty of 4 per cent., it is stated will be fixed prior to exportation.

In foreign mines there has been an active inquiry, and business done in St. John del Rey and United Mexican; bargains have also been effected in Bolanos, Barossa Range, Australian, and Imperial Brazilian.

By the Peninsular and Oriental Steam Company's ship, *Jupiter*, which arrived at Southampton on Tuesday morning, 25 packages of specie has been received. The vessel *Jane* has brought eight cases of specie from Oporto; and the *Amathia*, from Canton and Hong Kong, 12 cases. The *Oliver Cromwell*, from Valparaiso, has arrived with 3800 quintals of copper.

RAILWAY TRAFFIC RETURNS.

Name of Railway.	Lgth. Rway.	Present actual cost.	Price per share	Last Div.	Traffic Returns 1849	1848
Belfast and Ballymena.........	37½	—	20½	—	£ 396	£ —
Birkenhead, Lancashire, & Chesh.	19	997,284	37	5 p.c.*	686	61 9
Caledonian..	141	3,999,732	25½	—	2887	—
Chester and Holyhead	84	3,014,802	20½	4	1051	—
Dublin and Drogheda	35½	774,875	31½	1	692	—
Dublin and Kingstown	7	395,915	—	6	587	64 0
Dundee, Perth, & Aberdeen Junc.	47½	544,654	26½	8	847	70 1
East Anglian (Lynn to Ely)	67½	1,167,104	4½	—	680	—
East Lancashire	44	1,783,015	20½	5	1731	97 7
Eastern Counties and Norfolk	307	10,364,505	11½	4	12037	1174 1
Eastern Union	50½	1,522,232	12½	—	1175	104 4
Edinburgh and Glasgow	57½	2,556,889	43	6	2777	216 2
Edinburgh and Northern	78	1,722,213	15½	4*	1679	58 0
Glasgow, Paisley, and Ayr	102½	2,286,358	65	4	2280	213 5
Glasgow, Paisley, & Greenock	22½	848,328	14½	4	702	97 1
Gt. Southern & Western, Ireland	131	2,844,897	28½	4*	2891	157 3
Great Western	305½	11,311,069	97	7	15548	—
Kendal and Windermere	10½	174,600	28½	—	116	8 9
Lancaster and Carlisle	70	1,476,102	55½	4	1708	11 0
Lancashire and Yorkshire	172½	8,242,628	72	6	9606	864 1
London and North Western	485	22,835,120	131½	7	36534	3432 0
London and Blackwall	4	1,299,675	4-5	1-12	527	60 4
London, Brighton, & South Coast	162½	6,284,812	35½	2½	6193	599 4
London and South-Western	215	7,139,733	43	6	7426	612 0
Londonderry and Enniskillen	14½	154,643	16	—	—	12 8
Manchester, Sheffield, & Lincolnsh.	91½	4,651,093	53½	5	2493	196 8
Maryport and Carlisle	28	443,974	40	4	—	—
Midland Company	471	13,254,006	91	6	18803	1726 0
Midland Great Western (Irish)	50	725,332	18½	4*	917	80 6
North British	99	3,163,450	16½	5	2005	200 3
Scottish Central	45½	1,245,496	26	—	840	—
Shrewsbury and Chester	47	780,272	19	5	1256	57 6
South Devon	55½	1,789,351	17½	1½	1115	75 4
South-Eastern	165½	7,389,222	25½	6½	6478	706 6
Taff Vale	38	820,056	125	6½	1712	—
Ulster	30	684,604	40½	1½	724	64 3
Whitehaven Junction	12	150,879	109	3	—	15 5
York, Newcastle, & Berwick	260	5,038,255	28½	8	11404	956 4
York and North Midland	205½	4,179,309	57	8	6329	664 1
FOREIGN RAILWAYS.						
Amiens and Boulogne	76½	573,338	8½	4	980	978
Antwerp to Ghent (monthly)	81	—	—	—	—	—
Marseilles to Avignon	71½	—	8½	—	—	—
Dutch Rhenish	57½	—	1½	—	—	93 6
Northern of France	211	2,000,000	7½	4	11924	1125 0
Orleans to Bourges (Central)	107½	—	—	—	1919	241 0
Orleans to Tours	72	600,000	22½	6	2526	292 4
Paris and Orleans	82	2,011,720	28½	12½	6420	706 3
Paris and Rouen	85	2,082,916	17½	11½	4701	622 3
Rouen and Havre	59½	—	9½	—	1692	237 3
Strasburgh and Basle (monthly)	86	—	6	1½	6537	693 2
West Flanders ...... (ditto)	—	—	4	3	1065	161 5

* Interest.—Total for last week, £166,980, being an increase of £30,950 over last year.

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price.
1000	Abergwessin	7	—
512	Albert Consols	1	2¼
1024	Alfred Consols	8½	5
1000	Antimony & Silver-Lead	5	5¼
1024	Ashburton United Mines	8½	10
1024	Balleswidden	9	18
128	Balnoon Consols	25	25
10000	Banwen Iron Co.	5	6¼
1000	Barristown	5¼	1¼
4000	Bedford	2½	2½
1244	Birch Tor Tin Mine	9½	1¼
8000	Blaenavon	50	17½
100	Botallack	182	60
120	Brewer	5	7
10000	British Iron, New, regis.	10	7
—	Ditto ditto, scrip	10	10
128	Budnick Consols	52½	35
4000	Callington	19	14
1000	Camborne Consols	5	4
20000	Cameron's Steam Coal	6	1
256	Caradon Copper Mine	9½	3
256	Caradon Mines	22½	10
256	Caradon United	24	5
256	Caradon Wh. Hooper	21	8
1000	Carn Brea	15	100
3000	Carthew Consols	1½	5
112	Charlestown	220	60
512	Coatlithe Hill	½	1
1500	Comblawn	5½	3
128	Comfort	45	35
256	Condurrow	20	40
2560	Cook's Kitchen	14	2
1000	Coombe Valley Quarry	3½	4¼
6500	Cornish Mining Co.	2	2¾-½
20000	Cornwall New Mining	1	1
1000	Copper Bottom	1½	6½
1024	Cosheen	4½	20
212	Craddock Moor	23½	5
128	Creeg Braws	120	100
500	Cubert Mine	12½	—
1000	Cwm Erfin	3	4
300	D. Prior & Buckfastleigh	—	—
7100	Derwent	6½	5
845	Devon & Courtenay Con.	7½	¾
1024	Devon Great Consols	1	230
1000	Dhurode	2	5
186	Dolcoath	30	15
2560	Drake Walls	5	4
10000	Durham County Coal	45	9
3000	Dyfngwm	10	12½
512	East Alvenney	5½	12½
2500	East Birch Tor	3	3½
112	East Caradon	47	47
2048	East Crowndale	6½	2½
512	East Combe Silver-Lead	6½	6½
128	East Pool	15	30
9000	East Tamar Consols	½	¾
—	East Wheal Albert	1	3
94	East Wheal Crofty	125	250
1024	East Wheal Fortune	2	3
128	East Wheal Rose	50	600
—	East of Scotland Iron Co.	5	1½
123	East Wheal Seton	14	10
1280	Eagair Lli	1½	5
256	Exmoor Wh. Eliza	6	9-10
512	Fowey Consols	40	45
1024	Freidd Llwydd Mines	1½	3½
6400	Gadair	2	2
4000	Gen. Mining Co. for Irel.	1½	1½
256	Gonamena	44½	16
128	Goonvrea	4	2
100	Great Consols	1000	250
1900	Great Michell Consols	1½	¾
256	Great Resugga Moor	11	6
512	Gt. Wh. Rough Tor Con.	18½	11
1200	Growa Slate Company	5	5
256	Gwinear Consols	7	1
6000	Heignston Down Con.	½	1
256	Herodsfoot	18	22
10000	Hibernian	12½	1½
239	Hobb's Hill	6	1½
1000	Holmbush	22	1½
1024	Kingsett and Bedford	½	¼
827	Kirkcudbrightshire	8½	2
2048	Lamherooe Wh. Maria	13	2
252	Lanarth Consols	—	10
128	Lelant Consols	90	60
160	Levant	—	120
1000	Lewis	16	8
1000	Llwyn Malees	7½	5
3600	Llynvi Iron	50	50
256	Lostwithiel Consols	19	14
6000	Marke Valley	10	1½
5000	Mendip Hills	3	1½
5000	Merionethshire Slate Co.	1½	2
128	Metha	34	140
20000	Mining Co. of Ireland	7	4
256	New East Crowndale	3½	2½
128	North Fowey Consols	37	10
100	North Pool	45	500
140	North Roskear	5½	165
262	North Wh. Leisure	1½	2
15000	Northern Coal Co.	23	2
128	Par Consols	55½	1000
8000	Pennant & Craigwen	2	2
100	Penrhiw	30	65
1024	Penzance Consols	16s 3d.	2
512	Plymouth Wh. Yeoland	6½	10
200	Polsaith Consols	5½	4½
2500	Rhoswiddol & Bacheldon	10	10
10000	Rhymney Iron	50	13
10000	Ditto New	7	6½
1000	Rosewall Hill	1	5

BRITISH MINES—continued.

Shares.	Company.	Paid.	Price.
256	Rosewarva Mines	—	12
2048	Runnaford Coombe Tin	½	7
128	South Caradon	10	300
1100	South Dolcoath	4	5
256	Sth. Friendsh. Wh. Ann	20	4
256	South Molton	5	12½
256	South Tolgus	10	55
256	South Trelawny	28½	3
2000	South Wales Mining Co.	½	1-1½
128	South Wheal Basset	110	150
124	South Wh. Frances	160	240
256	South Wh. Josiah	—	1½-2
1000	South Wh. Maria	2½	1½
10000	Southern & Western, Irish	2	4
280	Spearne Moor	30	40
256	St. Austell Consols	9	—
94	St. Ives Consols	—	320
128	St. Michael Penkivel	5	10½
999	St. Minver Consols	3	6
1000	Stray Park	43	19
9600	Tamar Consols	3	6½
1024	Tavy Consols	4	4
6000	Tincroft	7	6½
1000	Tin Vale	2½	3½
58	Tokenbury	170	10
256	Tollpetherwin	3½	5
256	Tregordan	2	8
256	Treliane	2½	30
8000	Treleigh Consols	6	1½
2000	Trenance	3	—
96	Tresavean	10	150
120	Trethellan	5	16
128	Treviskey and Barrier	130	84
288	Trevean	1½	5
100	United Mines	300	350
256	Wellington Mines	25	20
256	West Caradon	20	130
512	West Fowey Consols	40	12
256	West Providence	9	15
200	West Seton	40	210
—	West of Scotland Iron Co.	240	90
120	West Trethellan	5	30
256	West United Hills	—	4½
512	West Wheal Frances	1½	2
256	West Wh. Friendship	9	8
3725	West Wheal Jewel	11	1½
256	West Wheal Tolgus	21½	6
256	West Wheal Treasury	19	10
1024	Whiddon Mines	4½	3
5200	Wicklow Copper	5	7½-¾-⅝
107	Wheal Adams	79	30
1000	Wheal Agar	—	8
256	Wheal Albert	10	1
240	Wheal Anderton	23	15
128	Wheal Ann	—	50½
512	Wheal Anna Maria	6½	8
1024	Wheal Ash	4½	8
120	Wheal Bal	5½	20
256	Wheal Benny	14½	2
256	Wheal Blencowe	21	5
256	Wheal Bucketts	20	5
256	Wheal Calstock	5	12
1024	Wheal Coad	1	4
268	Wheal Courtenay	12½	15
256	Wheal Fortescue	6½	3
388	Wheal Franco	27	18
128	Wheal Harriet	45	—
100	Wheal Henry	—	31½
1024	Wheal Lawrence	3	3
112	Wheal Margaret	79	250
512	Wheal Mary Ann	5	14
208	Wheal Mary Consols	60½	8
—	Wheal Penhale	—	12
210	Wheal Prospect	4	7
120	Wheal Reeth	41	150
128	Wheal Rose	60	5
99	Wheal Seton	214	720
180	Wheal Sisters	35½	5
512	Wheal Sophia	3½	5
128	Wheal Spearne	10	75
128	Wheal St. Ann	30	35
550	Wheal Trescoll	4	8½
260	Wheal Trelawny	7½	70
256	Wh. Tremaine (St. Ervan)	9½	2½
1024	Wheal Tremayne	9½	3
92	Wheal Tryphena	140	265
1000	Wheal Vincent	1½	6
256	Wheal Vlow (Perranz.)	½	½
184	Wheal Vyvyan	—	60
250	Wheal Williams	28½	8
1024	William & Mary Worth	2	2½

FOREIGN MINES.

Shares.	Company.	Paid.	Price.
5000	Alten Mining Company	14½	7
15000	Asturian Mining Co.	13	3½
20000	Australian	3	5¼-6
10000	Anglo-Mexican Co.	100	¼
12374	Ditto Subscription	25	1½
6000	Barossa Range	½	¼
3000	Bolanos	150	3
2000	Ditto Scrip	15	3½
12000	Brazilian Imperial	23	7
10000	Cobre Copper Co.	40	13
10000	Copiapo Mining Co.	14	2½
10000	General Mining Ass'n.	20	10
—	Guadalcanal	3½	5½
5000	Kinzigthal Mining Ass.	2	3
20051	Mexican Company	59	—
2000	Mexican & South Amer.	8	½
5000	National Brazilian	30	3½
104000	N. Brit. Australasian	1	¼
7000	Royal Santiago	10	4
11000	St. John del Rey	15	13½
43174	United Mexican ... Av.	28½	3½

LATEST CURRENT PRICES OF METALS.

LONDON, JANUARY 19, 1849.

	per ton.		
ENGLISH IRON. a			
Bar, bolt, & square, London	£6	10	0
Nail rods	7	10	0
Hoops	8	0	0
Sheets (singles)	9	0	0
Bars, at Cardiff & Newport	5	5	0
Pig, No. 1, Wales, cold-blast	4	0	0
Do. do. hot-blast	3	15	0
Do., No. 1, Clyde ... *net cash*	2	7	0
Rails	5	5	5 10
Chairs	4	5	0
FOREIGN IRON. b			
Swedish	13	10	0
CCND	17	0	0
PSI	—		
Gourieff	—		
Archangel	12	10-13	
FOREIGN STEEL. c			
Swedish keg	12	10-13	
Ditto faggot	15	10	0
ENGLISH COPPER. d			
Sheets, sheathing, & bolts, *p. lb.*	0	0	9
Tough cake ... *per ton*	79	10	0
Tile	78	10	0
Old copper e ... *per lb.*	0	0	7½
FOREIGN COPPER. f			
South American, in bond	73-75		

ENGLISH LEAD. g			
Pig ... *per ton*	£15	15	0
Sheet	16	15	0
Red lead	18	0	0
White ditto	22	0	0
Patent shot	19	0	0
FOREIGN LEAD. h			
Spanish, in bond	15	10	0
American ditto	—		
ENGLISH TIN. i			
Block ... *per cwt.*	4	3	0
Bar	4	4	0
FOREIGN TIN k			
Banca, in bond	4	6	0
Straits	4	5	0
Peruvian (6 mo 2½ p. ct. dis.)	—		
TIN-PLATES. l			
IC Coke ... *per box*	1	6	6
IC Charcoal	1	10	6
IX ditto	1	16	6
SPELTER. m			
Plates, warehoused, ... *per ton*	15	10	0
Ditto, to arrive	—		
ZINC. n			
English sheet ... *per ton*	20	0	0
QUICKSILVER, o ... *per lb.*	0	3	6

[Iron—Stirling's Patent, Glasgow, 2*l.* 19s. to 3*l.* 5s.; toughened pigs, Wales, 4*l.* to 4*l.* 5s.]

Terms.—*a*, 6 months, or 2½ per cent. dis.; *b*, ditto; *c*, ditto; *d*, 6 months, or 3 per ct. dis.; *e*, 6 months, or 2½ per cent. dis.; *f*, ditto; *g*, ditto; *h*, ditto; *i*, ditto; *k*, net cash; *l*, 6 months, or 3 p. ct. dis.; *m*, net cash; *n*, 3 months, or 1½ p. c. dis.; *o*, ditto, 1½ dis.

REMARKS.—During the past week, although there has not been a large amount of business done in iron, prices are very firm, and well maintained. The daily increasing confidence, and the unusually small stocks of iron in Wales, Staffordshire, and Scotland, is producing a favourable effect on the market. Scotch pig-iron, in the early part of the week, evinced a slight reaction, and a few lots, in the hands of needy holders in Glasgow, were forced off, for cash down, on easier terms; since which the price has again rallied, and may now be quoted at 46s. to 47s.—cash, for mixed Nos., whilst favourite brands command 2s. per ton more. Makers are firm at from 47s. to 50s., free on board at Glasgow. English tin has been advanced 4*l.* per ton. In other metals, no alteration.

GLASGOW, JAN. 18.—Towards the end of last week the market was heavier—many holders showing a desire to realise the profits accruing from the recent rise, and the price went down to 44s. The market is again better, however, and during the last two days there have been a few sales of mixed Nos. at 45s. 6d.—cash, which we quote as the price to-day.

EXPORTATION OF THE PRECIOUS METALS.—The following are the official returns of the exports of gold and silver from the port of London for the last week:—Silver coin to Belgium, 80,000 ounces; ditto to Havre, 4000.

THAMES TUNNEL COMPANY

The number of passengers who passed through the Tunnel in the week ending Jan. 13, was, No. of passengers, 17,378.—Amount of money, £72 8s. 2d.

JOINT-STOCK BANKS.

Shares.	Companies.	Paid.	Div. p. cent.	Price.
22,500	Australasia	£40	[illegible]	£16½
20,000	British North American	50	6	39
20,000	Colonial	25	5	5
—	Commercial of London	20	6	18½
4,000	Ionian State	25	6	24½ 25
60,000	London Joint-Stock	10	6	16
20,000	London and Westminster	20	6	23½
10,000	National Provincial of England	35	6	33
20,000	National of Ireland	22½	5	17½
20,000	Provincial of Ireland	25	8	40
4,000	Ditto New	10	8	14½
—	South Australia	22½	—	23½
20,000	Union of Australia	25	6	25½
10,000	Ditto New	2½	6	2½ 2¼
50,000	Union of London	16	6	10½

LEAD ORES

Sold at Liskeard, on the 13th January.

Mines.	Tons.	Amount.	Purchasers.
Wheal Mary Ann	60	£16 3 6	Tamar Smelting Co.
ditto	20	7 7 0	R. Michell & Penpoll Co.
Sold at Holywell.			
Maesyrewidde	41	£9 7 0	Newton, Keates, & Co.
ditto	23	9 15 6	J. P. Eyton.
Hendre	39	9 12 6	Newton, Keates, & Co.
ditto	5½	9 10 6	J. P. Eyton.
ditto	18½	9 10 6	ditto
Fronfownog	110	9 18 0	Mather & Co.
ditto	10	10 17 0	Newton, Keates, & Co.
Peel	90	10 2 0	Mather & Co.
Cairnsmore	40	9 2 6	ditto
German	10	7 5 0	Newton, Keates, & Co.
ditto	10	5 0 6	ditto
Total tons	392.		
Sold in London.			
Wheal Adams	33	£10 15 0	R. Michell & Son.
Tamar	87	18 17 6	T. Somers.
Holmbush	22	14 18 6	Tamar Smelting Co.

BLACK TIN

Sold to the Charlestown Smelting-house, Dec. 22, 1848.

Mine.	Tons	c.	qrs.	lbs.	Price per ton.	Total.
Ashburton United	3	17	0	12	£50 0 0	£192 15 4
ditto	0	15	1	20	37 0 0	28 10 10
ditto	0	2	1	23	47 0 0	5 15 4

Total—4 tons 14 cwts. 3 qrs. 27 lbs.—Amount of money, £227 1s. 6d.

COPPER ORES.

Sampled Jan. 3, and Sold at the Royal Hotel, Truro, Jan. 18, 1849.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
Devon Gt. Cons. Wh. Josiah	93	£5 14 6	Wh. Anna Maria	53	£4 18 6
ditto	89	7 5 0	ditto	36	6 3 6
ditto	88	6 6 6	West Caradon	98	6 2 6
ditto	81	6 16 0	ditto	84	6 5 0
ditto	50	4 18 6	ditto	82	5 19 0
Wh. Fanny	94	3 12 6	ditto	40	8 10 6
ditto	87	3 12 0	ditto	36	3 9 0
ditto	86	3 19 0	ditto	32	10 12 6
ditto	85	4 6 0	Fowey Consols	82	5 14 0
ditto	83	3 16 6	ditto	81	6 3 6
ditto	80	4 11 6	ditto	79	5 6 0
ditto	79	4 16 6	Wh. Friendship	107	7 18 0
ditto	78	4 0 6	ditto	105	7 13 0
ditto	69	3 19 6	Poldice	57	3 14 0
ditto	68	6 0 0	ditto	52	4 8 0
ditto	60	4 9 0	ditto	8	1 10 0
ditto	58	3 19 6	Bedford United	114	4 9 6
Wh. Maria	65	6 6 6	Wh. Maiden	21	4 8 6
ditto	62	7 17 6	Wh. Jewel	14	2 18 0

TOTAL PRODUCE.

Mines.	Tons.	Amount.	Mines.	Tons.	Amount.
Devon Gt. Cons. Wh. Josiah, Wh. Maria, Wh. Fanny, Wh. Anna Maria	1541	£7814 8 6	Fowey Consols	242	£1386 5 6
			Wh. Friendship	212	1632 10 0
			Poldice	117	451 14 0
			Bedford United	114	510 3 0
			Wh. Maiden	21	92 18 6
West Caradon	372	2418 7 0	Wh. Jewel	14	40 12 0

Average Standard £84 12 0 | Average Produce 9¾

Average Price per ton £5 9 0

Quantity of Ore 2633 tons. | Quantity of Fine Copper, 255 tons 3 cwts.

Amount of Money £14,346 18 6

LAST SALE.—Average Standard £87 7 0.—Average Produce 8⅞

Standard of corresponding sale last month, 81*l.* 12s.—Produce, 10½.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Vivian and Sons	491	£3108 5 6
Freeman and Co.	342	1742 6 0
P. Grenfell and Sons	357	2013 10 0
Sims, Willyams, and Co.	545	2624 8 6
Williams, Foster, and Co.	829	4584 3 0
Schneider and Co.	69	274 5 6
Total tons	2633	£14,346 18 6

Copper ores for sale on Thursday next, at the Royal Hotel, Truro.—Mines and Parcels.—Consols Mines 789—United Mines 667—Treviskey 422—Tresavean 397—Par Consols 290—South Caradon 209—Wheal Comfort 186—Wheal Mary Consols 170—Treleigh Consols 168—South Tolgus 157—Wheal Henry 118—Creeg Braws 102—Perran St. George 99—Wheal Ellen and Wheal Music 91—Grambler and St. Aubyn 74—Wheal Clifford 20—Total quantity of ore to be sold, 3959 tons.

Copper ores for sale on Thursday week, at Andrew's Hotel, Redruth.—Mines and Parcels.—East Wheal Crofty 646—North Pool 581—Camborne Vean 435—Wheal Seton 423—Tincroft 307—South Wheal Basset 240—Fowey Consols 236—Condurrow 221—East Pool 185—Dolcoath 158—Trethellan 153—Wheal Mary 120—South Wheal Frances 110—Wheal Prudence 72—Wheal Vyvyan 36—Wheal Andrew and Nangiles 25—Richards's ore 18—Wheal Harriet 12—Wheal Kitty 5.—Total, 3983 tons.

COPPER ORES

At SWANSEA, for sale January 25—Cobre 115, ditto 102, ditto 69, ditto 59, ditto 54, ditto 50, ditto 49, ditto 13, ditto 100, ditto 80, ditto 60, ditto 56, ditto 55, ditto 51, ditto 36, ditto 16—Cuba 35.—Total quantity, 1000 tons.

BLAENAVON IRON-WORKS.—At Christmas last, the former respected and efficient managers, Messrs. Hill and Wheeley, once more undertook the management of these flourishing works; and, as usual, are very strenuously exerting themselves in placing them in the prosperous position they formerly occupied. On Thursday, the 11th instant, a furnace was blown in; and, on Sunday last, it produced a superior casting of about 5 tons of pig-iron. Preparations are being actively made for blowing in the other two. The two furnaces, which were in blast previous to Christmas, made last week the unprecedented quantity of 242 tons of iron, long weight; and, under the able superintendence of the furnace manager, it will undoubtedly continue.—*Monmouthshire Merlin.*

NOTICES TO CORRESPONDENTS.

We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses; not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

"A Merchant" (Boston).—The communication is declined, with thanks.

"An Insurer" (Dolgelly).—We cannot recommend any one particular office as superior to another for insurance. Application should be made to the agents for copies of the prospectuses, wherein the respective advantages are set forth. The Atlas Company is divided into 24,000 50*l.* shares, on which 5*l.* 6s. 8d. is paid—now worth 14*l.*, and paying a dividend of 13s. 6d. per annum. The Crown, 5*l.* shares—worth 12½*l.*, and dividend 14s. per annum. The Imperial, 50*l.* shares—worth 215*l.*, and dividend 12*l.* per cent. The Eagle, 5*l.* shares—worth 5¼*l.*, and dividend 6s. per share.

MINING IN THE TAVISTOCK DISTRICT.—We are quite willing to publish Mr. Watts's statement, in reference to the Wheal Elizabeth Mine, as an advertisement—the subject is too limited in interest for us to allude to more than we have already done.

"A Reader" (Albany).—A Spanish vara is 33 inches.

"R. E." (Hull).—The office of the Illuminated Glass Company is in Moorgate-street London.

"A Student" (King's College).—Professor Ansted's lectures "On Mining and the Practical Application of Geological Science," were commenced in the Journal on the 16th October, 1847, and continued in subsequent Numbers until the course was completed.

"A Young Miner" (Liskeard).—Budge's *Miners' Guide* (Weale, Holborn); Mitchell's *Manual of Assaying* (Balliere); and *Glossary of Mining Terms* (*Mining Journal* Office).

"A Coal Proprietor" (Wigan).—The office of the Abercarn and Gwythen Collieries Company is at Pillgwenlly, Newport, Monmouthshire—John Bladen, secretary.

CALIFORNIA.—By later accounts from America, the gold mania would appear to be subsiding a little—the papers being less loaded with accounts of doings at the "diggings." We shall, next week, have some further particulars to publish, when we shall also notice a pamphlet just issued by Mr. Effingham Wilson, giving a geographical, topographical, and historical description of the famous gold regions, with a coloured map of the country.

"An Inventor" (Leeds).—We do not know the address of Mr. R. Rettie, or whether his signal light has been adopted.

We have been compelled to postpone Mr. T. Motley's reply to the letter of "A Road-locomotive Engineer," in last Journal; also the continuation of the series of papers on the "Bank Charter Act of 1844, and the Industrial Interests of the Country—Wages;" and several letters from correspondents.

*** The numerous disappointments in procuring back Numbers during the past year induces us to suggest, that subscribers should be careful in filing, or otherwise preserving, their papers; and where extra copies are required, that they should be applied for as early as possible.

NOTICES TO CORRESPONDENTS—(*Continued*).

SALE OF TIN AT WHEAL ANDERTON.—Capt. Carpenter (Jan. 17) writes—"In your Journal of last week, an error occurs as regards the value of the 11 tons of ore shipped from this mine; it averaged above 36*l.* per ton, and the amount exceeded 400*l.*—not 111*l.* 2s. 6d., as there stated. This must have arisen from some ore, parcelled, but not sold, being included in your return, the price offered for that being only 11*l.* 12s. 6d.; therefore, by calcination, it would be 45*l.* 7s. 6d.: the reduction, which is very inconsiderable, arising through the process of burning the ore at the mine."

"O. G. T." (Daventry).—A new London and Birmingham Railway was projected in 1845. The engineer was Robert Henson, C.E., and the surveyor Mr. John Elliott. We are not aware where, or to whom, communications respecting the undertaking can now be addressed.

AGRICULTURAL CHEMISTRY.—We received from Mr. De la Haye (Liverpool) a reply to the remarks of "A Mining Captain," in the Journal of the 6th January—the insertion of which was rendered unnecessary by the excellent paper of our esteemed correspondent, Dr. Murray.

BLAST-FURNACES.—"Statist" (Glasgow) writes—"On a late occasion, your Journal gave correct lists of the total number of furnaces in and out of blast in the Birmingham district, and on the 6th inst. similar information of the works in Scotland. It is very desirable to possess correct data of the iron trade at present, and if any of your correspondents would furnish a correct statement of the furnaces in and out of blast throughout the other districts of England and Wales, the information would, I am certain, prove useful, not only to the ironmasters themselves, but also to many others whose interests are intimately, though indirectly, connected with the iron trade." [We quite agree with our correspondent, as to the importance of possessing correct information respecting the iron trade, and shall feel greatly obliged to those correspondents who may furnish the statements referred to.]

"A Tinner" (St. Just).—The price of English block tin fell from 82s. per cwt. in Jan., to 75s. per cwt. in June, at which price it continued (with the exception of an advance of 2s. per cwt. during three weeks in Sept.) until Nov., when an advance of 4*l.* per ton on common tin, and 6*l.* per ton on refined was established.

WATER-WHEELS.—"G. K." (Manchester) writes:—"In all the practical works on the science of mechanics sufficient data are never given for finding the power of a *water-wheel*; they all calculate under the hypothesis that the water is delivered at the extremity of the vertical axis of the wheel; but first it is to be known whether the buckets of the wheel are filled, because it will be required to find where the buckets begin to discharge the water from the wheel, and also to find whether the water discharges itself uniformly, or becomes a differential quantity; perhaps some of your readers will give a perfect formula."

"A Chemist" (Liverpool).—The specification of Mr. De Sussex's patent for improvements in the Smelting of Copper Ore, was published entire in No. 635, p. 498. We shall be glad to receive a communication on the subject—with drawings, if requisite.

"A Miner" (Laxey).—We believe that the formation of the new smelting company is progressing very favourably; indeed, we understand that there can be no question of an influential board of directors being speedily completed, as the necessary arrangements are being successfully carried out.

"An Engineer" (Woolwich).—The engineer by whom the engines for draining the lake of Haarlem were designed, and under whose superintendance they are now being erected, is Mr. Arthur Dean, C.E., Charing Cross. We expect to publish, in an early Number, an interesting paper on the subject, by that gentleman.

"An Intending Visitor" (Camberwell).—The *Times* informs us that the route to California, by the West India Mail packets, may be accomplished with considerable rapidity. These packets leave Southampton on the 17th of each month, arriving at Chagres about the 23d of the succeeding month. Thence across the Isthmus to Panama occupies three days, at an expense of about $25. The steamers of the United States Pacific Company are announced to leave Panama for California on the 1st of each month, and the charge for a passenger in the state-room is $250; in the lower cabin, $200; and in the fore cabin, $100. The passage-money by the West India Mail steamers, from Southampton to Chagres, is either 60*l.*, 50*l.*, or 45*l.*, according to the accommodation; and for mechanics or artisans, 25*l.*

"G. D." (Llandudno).—The letter has been forwarded, as requested.

THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, JANUARY 20, 1849.

We have, in several of our late Numbers, referred to the existence of gold in Wales. We have now much pleasure in drawing attention to an interesting account of the subject in another column. We need hardly say, that we place every reliance on the source whence our information is obtained; while there is the additional authority of Her MAJESTY'S Commissioners of Woods and Forests, who directed the officers of the geological staff attached to the board, to report on the actual state of the discovery of gold, in order to satisfy themselves of the fact, before they returned an answer to the memorial presented to them on the subject of the rights of the Crown. We shall abstain from any comments on the question this week; but, in the meantime, we invite attention to it; and as it is pregnant with important results, it may be, to the country, we hope to take an early opportunity of recurring to the subject.

In our Number of the 6th instant, we laid before our readers an analytical account of the sales of copper ores at the Cornish ticketing, for the quarter ending 31st Dec. last, and a comparative statement of quantities, values, and fluctuations, within the preceding quarter and the three several years ending at Midsummer, 1848, 1847, and 1846. We now present a similar account of the Swansea ticketings, and corresponding means of comparison with the antecedent periods. The only essential differences between the two statements are, that the average standard, which is given with each of the Cornish ticketings, is omitted as regards the Swansea sales; and that the average produce of the ore—the computed quantity of fine copper—and the value of ore to produce a ton of copper, are omitted in the line which exhibits the business of the quarter ending 30th Sept. last. To have given them would have compelled the postponement of the statement for another week, in consequence of the great number of calculations to be made, in order to arrive at a correct state of the case. The matter will, then, stand thus:—

ACCOUNT OF THE SALES OF COPPER ORES AT SWANSEA,

IN THE QUARTER ENDING DEC. 31, 1848.

Description of ores sold and dates of sales.	Quantity of ore.	Average Produce.	Computed quantity of fine copper.		Average prices of Ores.			Amount of Sales.			Value of ore to produce 1 ton of copper.		
FOREIGN ORES.	21 cwts.	Per Cent.	Tons	cwts.	£	s.	d.	£	s.	d.	£	s.	d.
Sold Oct. ... 5	1626	18·266	296	7	11	4	7	18,260	15	0	61	13	2
„ „ .. 19	2211	19·726	436	3	12	11	10	27,841	0	6	63	16	8
„ Nov. .. 2	1516	22·218	335	10	14	4	1	21,649	12	6	64	10	6
„ „ .. 16	1736	23·482	407	13	15	11	6	27,035	18	0	66	6	5
„ Dec. .. 7	1581	27·775	439	3	18	14	5	29,603	19	6	67	8	3
„ „ .. 28	1799	20·525	369	5	13	4	6	23,788	7	6	64	8	6
Totals & avgs. for the quar.	10463	21·830	2284	1	14	3	3	148,179	13	0	64	17	6
IRISH & WELSH ORES.													
Sold Oct. .. 5	294	8·333	24	10	4	15	6	1,488	14	6	60	15	3
„ „ .. 19	739	9·337	69	0	5	18	7	4,382	2	6	63	10	2
„ Nov. .. 2	619	9·806	60	14	6	7	2	3,936	16	6	64	17	1
„ „ .. 16	349	9·370	32	14	6	4	9	2,177	8	6	66	11	9
„ Dec. .. 7	749	9·500	71	3	6	6	6	4,735	19	6	66	11	3
„ „ .. 21	476	9·989	47	11	6	5	1	2,977	0	6	62	12	2
Totals & avgs. for the quar.	3226	9·472	305	12	6	2	1	19,698	2	0	64	0	2
TOTAL OF ALL SORTS.													
Sold Oct. .. 5	1920	16·711	320	17	10	5	9	19,749	9	6	61	11	1
„ „ .. 19	2950	17·124	505	3	10	18	5	32,223	3	0	63	15	9
„ Nov. .. 2	2129	18·609	396	4	12	0	4	25,586	9	0	64	11	7
„ „ .. 16	2085	21·120	440	7	14	0	3	29,213	6	6	66	6	10
„ Dec. .. 7	2330	21·901	510	6	14	14	9	34,339	19	0	67	5	10
„ „ .. 28	2275	18·325	416	16	11	15	4	26,765	8	0	64	4	4
Totals & avgs. for the quar.	13689	18·917	2589	13	12	5	3	167,877	15	0	64	16	6
Ditto quarter ending Sept. 30, 1848.	12628	—	—	—	10	12	10	134,390	2	0	—	—	—
Ditto for year ending Midsum., 1848.	50731	17·040	8644	10	12	8	2	629,665	8	0	72	16	8
Ditto for year ending Midsum., 1847.	53284	16·622	8856	14	12	13	9	676,669	9	6	76	6	7
Ditto for year ending Midsum., 1846.	64987	15·062	9788	5	11	10	9	748,914	13	0	76	10	3

The foregoing statement is divided into three portions. The first gives the account of each sale, with the total quantities and ave-

rages for the quarter, of *ores strictly foreign*. The second gives the accounts relative to the *Irish and Welsh ores;* and the third the totals of foreign and British—or, as our friend JOSEPH HUME would say, "the tottle of the whole," succeeded by the results of four corresponding statements, commencing at Midsummer, 1845.

A comparison of the right hand column of the above, and our account of the English ores, a fortnight ago, will show, throughout, an advantage in prices, favourable to foreign ores, averaging from 7*l.* to 8*l.*, upon the quantities required to produce a ton of copper. The only way in which we can account for this is, that the Swansea sales are not exposed to the charge of the 7s. or 8s. per ton, which attaches to the Cornish and Devon ores, for carriage and freight. But, after making that allowance, the excess of price paid for foreign ores leaves an advantage in their favour of 2*l.* to 3*l.* per ton of metal over the English ores.

It will be seen, that the average produce of ores sold at Swansea has gone on steadily increasing in each year; the produce of the year ending in Midsummer, 1846, having been 15$\frac{1}{16}$th per cent.: whilst that of the quarter just concluded was 18$\frac{5}{16}$ths per cent., the average including the low produce ores of Ireland and Wales. But there is no corresponding advance in price; the right hand column showing 64*l.* 16s. 6d. as the value of the ores computed to produce a ton of copper in the last quarter; which, three years ago, was worth 76*l.* 10s. 3d., being a fall in price of 11*l.* 13s. 9d. This mode of computation is, in truth, *the standard*, the only true one; nor does the closing transaction of the year show any improvement in price; the average value of the whole quarter, for the ton of metal, being 64*l.* 16s. 6d., the sale of the 28th Dec. realising only 64*l.* 4s. 4d.

As we think it desirable that the importers of the ores of each country should know the progress of the trade in which they may be directly interested, we purpose, next week, to give separate statements, in a somewhat similar form to the above, of the ores of Australia, Cuba, and Chili, the three chief supplying countries, leaving our readers, in the meantime, to con over the general analysis, as now furnished.

To our minds, the electors of the borough of Truro have no more than done their duty in returning Mr. HUMPHREY WILLYAMS to represent their peculiar interests in the Imperial Legislature. They have acted like men of common sense would act under the circumstances in refusing a stranger whose acquaintance with them began yesterday—a lawyer, and a pure novice as to the great mining necessities of the district—and choosing rather an individual born among them—a man who has thriven as a merchant and banker under their immediate observation, and is as familiar with the prevailing wants and interests of the borough, as lying in the centre of the mining business of the county, as his opponent was by training ignorant of, and by habit incapable of, appreciating them. The Conservative electors themselves may look on this picture and on that, and entertain no kind of doubt as to which ought to be the object of their instant preference. Of course, the Liberal party in Truro, whose triumph this is, well know how to enjoy their success. In a neck and neck pace, they have won by about half a length—the other sitting Member repudiates their ribbons. There is, therefore, little cause for exultation; and, if there were, we expect the winning party would be found enjoying their advantage just in the manner which meek and Christian gentlemen should do. We are satisfied as to all this; nor should we have adverted to the subject again, but that the *Cornwall Gazette* is waxing indignant and half heroical, that Mr. WILLYAMS is the new Member for Truro at all; and, also, that the texture of his politics is what it is. That, however, is a consideration for the electors before they make their choice; having done so, they have accepted the individual with all the antecedents. But Mr. WILLYAMS does not go to Parliament to represent the *Cornwall Gazette*, nor particularly the Conservative section of his constituents, but the borough of Truro as a whole, and in all its relations; and we think that for these purposes he is, by habit and personal intelligence, as well qualified as any gentleman who has sat for Truro within living memory. It is for this reason that we warn our contemporary, that though the hon. Member probably would not, yet that we should in such a case, give ourselves for a moment to the refutation and reproof of the rough and unscrupulous criticisms of the local press; but we should rather hope that our brethren in that department would not furnish us with the occasion.

It has ever been our object to promote and encourage mining industry by the application of capital, whereby employment is not only afforded to the working miner and collier, but returns made to those who have embarked their capital. We have had occasion oft to advert to CAMERON'S STEAM COAL COMPANY, and a few words, *en passant*, may not be amiss at the present moment, inasmuch that two meetings have been held—some 10 or 12 hours occupied—and the result has been that of loss of time, and no advance, in the slightest degree, made towards a settlement of the disputes, or differences, existing between the parties. We feel it due to ourselves, as also to the shareholders, to offer some few observations on the present position of the company—having been attacked individually, under the impression that a bias existed, which, we believe, will be readily admitted is not the case. Without regard to one side or other, we are desirous to put before those more immediately interested matters just as they stand. In the first place, Mr. CAMERON disposes of the property for the sum of 150,000*l.*, with a dead rent, or royalty, of 2000*l.* per annum. The company was formed upon those terms; the shareholders were satisfied therewith, or ought to have been so, having the opportunity afforded them of ascertaining the terms upon which the colliery had been acquired. It appears, however, that the shareholders, who are now so indisposed to carry on the working of the colliery, feel, as we observed in a former Number, that they are, to use an Americanism, in a "fix." This cannot be helped, and if they be "mulct" of their money, we can only say it is their own fault. A word as to the meetings to which we have made reference: Mr. CAMERON (the lessor), in consequence of the calls not being responded to, and a division with the proprietary as to the course to be henceforth pursued—he having, moreever, a claim of some tens of thousands of pounds upon the company—placed before the shareholders a proposal for working the collieries, so as to secure to them a minimum interest, or return, of 5 per cent. per annum on their outlay for a term of seven years, which was then to be subsequently extended to 10 per cent, and the money repaid those who had advanced their capital. This would appear to us as good security being afforded, and a fair return, at least, to those who expressed themselves as doubtful of the value of the property. The proposition, however, was rejected, and, we think, very properly so, whether we look at one side or the other, inasmuch that if the property be valuable, as such we believe it to be, then the profit would be thrown into the hands of the lessor, and, in the end, the colliery itself, which virtually belongs to, and should be enjoyed by, the shareholders. On the other hand, it must be borne in mind that the shareholders are required to advance a sum of some 20,000*l.* or 30,000*l.*, in addition to the liabilities already existing, to enable Mr. CAMERON to prosecute and carry out the working of the colliery, so as to afford the promised returns. This, then, is a question of consideration, while it has no reference to the liabilities already incurred, and from which the shareholders cannot get quit. We at all times look with suspicion and distrust where we find the lawyers to be active in associations which require only common sense and common prudence to conduct them honestly; unfortunately, in the present instance, we find that there is an apparent disposition, on the part of the lawyers, on both sides, to avoid the Court of Chancery; and yet we believe that one, if not both, are anxious, and greedily looking for instructions, to draw a brief for counsel. There can be no mistake on this point, for we find that so soon as an advance is made on the one side (that of Mr. ELDERTON), and which, we must say, we thought the best course which could be adopted—that of throwing "oil on the troubled waters"—and endeavouring, so far as was practicable, to conciliate parties by their meeting together, and canvassing the real or supposed wrongs. We find Mr. FRY (the solicitor to the oppositionists) instantly taking a retrograde motion—as we find, that while he expressed his readiness to act as one of a committee, was desirous that it should be clearly understood that he, on the part of his *clients*, could not admit the lease to be valid, thereby raising the question, which was evidently the object of evading the responsibilities to which his clients were subjected.

It is not for us to follow the remarks of those who, without regard to the interest of the shareholders, were evidently determined on pursuing the one, or other course; and much is it to be regretted that suggestions thrown out with the view of conciliating the adverse parties had no effect. It would appear to us that the leader of the "van," and those who follow in his "wake," have one object, and one alone, in view—that of getting rid of liabilities already incurred, and those to which they are subjected under the terms of the purchase of the property, and the annual dead rent. On the other hand, it is quite clear that the lessors are not so ready to give up the claim which they have upon the shareholders; and hence it is, as we observed on a former occasion, having used an expression which was considered by certain parties most objectionable, that there is no question the shareholders are most assuredly in a "fix." We have only to express our regret that so much time should have been lost, so many lawyers' fees to be paid, that so many writs should have been issued against the company for sums even under 10*l.*, that the working of the colliery should have been suspended, that expenses of establishments in London and Swansea should be going on without any prospect of returns—the colliery idle, and interest daily accruing upon loans; while the officers of the company in London are solely employed in giving instructions to the solicitor for the recovery of the calls—all which, however, we trust will, by the good sense of the shareholders, independent of the one side or other, be brought to an early close.

There can be no question as to the value of the property, and the quality and properties of the coal. It is now some time since that we devoted 10 or 12 hours at Woolwich Dockyard to test its power under the orders of Government. The result was, upon the occasion, given in the columns of the Journal. Whether the amount paid for the property be too much or too little—for on that point we cannot advance an opinion—we believe one thing is quite clear, that the property is extensive, the quality of the coal undoubted, as appears from the reports of the agents who have been consulted, and whose reports, which have been submitted to the shareholders, bear ample testimony—while we do not find that any one is bold enough to advance a contrary opinion. Our impression is, that certain parties are anxious to get rid of liabilities—that others are equally desirous of pocketting the fees; and no doubt, on the other hand, that there are others who look to the balance to be paid, and officers who would much regret the dissolution of the company.

The operation of legislative enactments of late, as affects the mining operations of this country, will be well understood by a reference to the tabular matter introduced into our Journal of the 6th inst., and that of to-day. In considering our position, with relation to the import of foreign ores, we certainly did not contemplate on the importation of refined or cake copper, which should command a price such as has been obtained, and to acquire which so much eagerness has been shown by the smelters—while it may be that the ores of Chili contain gold, and hence the desire to secure the metallic copper from that country, and which we believe to be the case. Within the past week or ten days, Chili metallic copper has been sold to the amount of nearly 100,000*l.*, which will rather astound our Cornish friends, who produce only eight times that amount in the year.

We will, however, take figures. The *Arno*, from Valparaiso, brought over 60,800 ingots, weighing 450 tons, which was of refined Chili copper ore; the *Oliver Cromwell* brought 150 tons of the same quality. These several imports were, as we believe, consigned to Messrs. ANTHONY GIBBS and SONS, and a purchase at once made. About 500 tons of ordinary cake copper were lying in London and Liverpool—300 of which were in London, and 200 at the latter port, from the same *locale*—which latter quantity was, as we are given to understand, at once purchased by monopolo-smelters, at rates from 74*l.* to 76*l.* per ton. It is thus evident that, although the Government have considered it advisable to admit foreign ores at a nominal duty, yet that parties abroad possess the means of smelting the ore, and, as we find, bring into the home market no less than 1100 tons in one week, which met with ready sale, amounting to upwards of 80,000*l.*

This appears to be a most important question, and to which we cannot but think that it behoves the Cornish miner to direct his attention, as the matter we are thus enabled to place before him, with the influx of foreign ores and foreign copper, the latter, assuming it at the average of the produce of Cornish mines, being equal to 900 tons of ore sold in one week will at once show the relative positions of our own mines, contrasted with those abroad. If there be any argument which could be adduced, with reference to the smelting monoply, the present, we think, must be held conclusive; and it is at this moment that we should hail with pleasure the perfect establishment of the new smelting company, for never was there a field so open for them as that presented at present.

We think they are right in "laying on their oars" for awhile; but we would say to them—let not the opportunity pass by, but be "up and at 'em"—feeling well assured that it requires only capital and energy to effect that object, which must be beneficial to the lord, adventurer, and working miner, and destroy that state of things which is so baneful to the interests of all connected with our home mines.

The tale is trite—how alchymy had its chimera, and how the surviving adepts abandoned (ostensibly, at least) their cherished object for the more rational and profitable pursuit, which resulted in their bequeathing to their successors that jewel which adorns the diadem of science with "brightest ray"—the light of chemistry. In many a sceptic mind the moral of this story, which tells us to beware the *ignis fatuus*, will not inaptly rise on recurring to the subject of electric light. But there are two morals here. We are taught not prudence alone, but perseverance in a right direction as well. In exploring this new region, we feel confident that, provided our progress be governed by wisdom and energy, the treasure of success lies fairly before us.

We do not fear the bias of the eminent professors of a science that has received its best rewards on account of accidental discoveries, whose voices must a verdict give on the scientific issues for trial. We have equal trust in the final judgment of public opinion. Nothing that is bad survives beyond an ephemeral existence, and nothing that is really useful in these days lies long neglected.

It is to be hoped that the third party interested may give as little cause for apprehension. It was a bold stroke to rouse the attention of the public to their proceedings, and it argues high confidence, if not worldly wisdom, to have allowed the excitement consequent on the exhibitions of the light to subside. Had they descended to the employment of the usual dexterity practised in the *quasi* legerdemain peculiar to the formation of some companies (inelegantly, but expressively, in the language of the gentlemen of the Stock Exchange, termed RIGS) we cannot answer what might have been the result—the wholesome fear of shares of any shape now prevailing, notwithstanding. But the zeal of the multitude has since cooled, and it is not likely that the reserve—we had almost said the doubts—of the public, will be laid aside without just grounds. Therefore, we look upon an effort to bring the public into any scheme of jobbing on the speculation of the ultimate prospects as clearly impossible. The merit of the light is now the sole subject for discussion, and we must approach it with a proper disposition for arriving at a fair conclusion. At present we have nothing but the *ipse dixit* of an inventor to rely upon. None of the competent professional men whose evidence might influence our judgment, has been brought forward, to pronounce an impartial opinion. It has not been publicly asserted that the patentees have thus fortified their claim to public confidence. Now that no reasonable objection can be made to full and fair investigation, the inventors must not hope to be listened to, until their pretensions shall have been submitted to a rigid and impartial scrutiny. However, it would seem that this word of cantion is almost unnecessary; for the delay that has ensued would seem to indicate, on the part of the several patentees, a deliberate purpose to avoid any premature movement. Our chief misgivings arise, we must confess, on a different ground. From several of the announcements, it would appear, that the most sanguine promises have been made, assuming, in fact, that absolute perfection has been obtained; and that this invention is so far advanced as to supersede all other modes of artificial illumination. We are far from that opinion; but it is with great diffidence we say so, and we shall be glad to avow ourselves in error. It would be manifestly unjust to express a hasty opinion upon the case as it stands.

We present to our readers an abstract of Mr. STAITE'S specification, with a copy of which we have been obligingly furnished. We give the outline of all that is essential for general purposes. The document itself is exceedingly lengthy, extending to 30 brief sheets, exclusive of the drawings. That the ingenuity of lawyers could have rendered it so prolix, we could hardly believe; but many a weary peruser, whose interest has led him to the task, can testify to the truth of our assertion. We shall, next week, probably give a more extended notice of it; and, at the same time, we shall also place before our readers the specification, enrolled to-day, with which M. LE MOLT has favoured us. To enter more earnestly upon this interesting topic will then be our duty. We do not forget that there are other parties to be listened to. We did not suppose, indeed, that our predictions of last week would be so soon realised. Already is there in the field several to dispute the laurels of those gentlemen; and we have some time to wait for the specification of the third patent, referred to in our last Number. That there is something in the patent may be collected from the fact, that Mr. ALLMAN recently opposed, on the application for a patent on the part of Mr. STAITE and Sir F. KNOWLES, which was abandoned, on account, we must suppose, of the success of the opposition. We still omit nothing which can tend to a fair consideration of the question. Those interested will find our columns always open to communication—having it, as their object, to place it fairly before the public.

We close these observations with a word to the patentees, who are, doubtless, preparing to advance. It is this—if too much be not grasped at, as in the example of avarice in the fable, the fairest expectations may be realised; but if you seek too much, profess too much, or act unwisely, then rest assured that, as a corollary to the search for the philosopher's stone, you will be met by clamour, contempt, and disappointment. To him who avoids this fate, we would be but too happy to offer our sincerest congratulations.

We observe that the *Aberdeen Herald* is clever enough to discern the pen of Mr. SPICER in our late remarks on the conduct of certain ex-directors of the ABERDEEN RAILWAY. We may inform our contemporary, that it is not *our* practice to open our columns to any one for the purpose of gratifying his private objects. *We* have our own means of conveying our sentiments, and we are not in the habit of requiring, or making use of, the assistance of others, particularly when they have any personal interest in the matter. For the credit of the press, we shall be sorry if there is any exception to this in the kingdom, and we hope that our contemporary cannot give us any example to the contrary, in his own town, or anywhere else. He refrains from entering into the subject of our remarks, and expresses his intention of waiting for the result of the London meeting. What advantage to himself he expected to gain from this course, we are at a loss to imagine; but, as the meeting has taken place, it may be as well to state a few particulars that then transpired.

Such is the confidence in the new board, that it appeared that the preference stock was subscribed for to the extent of 90,000*l.*, the whole amount being 276,000*l.*; while some of the directors and their friends had volunteered to take four times the amount of their proportion, if necessary. We understand that, since the meeting, the amount subscribedfor is considerably above 100,000*l.*; so that it is now certain that the whole will be taken up; indeed, in consequence, the shares have been done to-day at 19*l.*—being an advance of 4*l.* per share since the meeting in Aberdeen. Does our contemporary wish any further proof of the effect of the late change in the board upon public feeling?

As our northern contemporary appears so very zealous in the support of a certain "*clique*" of Aberdonians, perhaps he will volunteer being the advocate in another cause, with which some of these worthies are by no means unconnected. What is the reason of his silence on our repeated remarks of late on the affairs and management of the NORTH BRITISH AUSTRALASIAN COMPANY? Is the case too bad, even for his abilities, to attempt a defence? On behalf of his clients, can he inform the shareholders why the directors' report of 3d August, 1844, stated the liabilities to be 42,287*l.* 11s. 4d.; while that of the recent committee of inquiry announces that they were then 46,433*l.* 11s. 1d.? How does this difference, of upwards of 4000*l.* arise? Can he give the shareholders any explanation of the extraordinary system of the directors, not having published any reports for a considerable period; while they would not even allow the finapcial statement of the company to be *read* at the meeting? Can he also give a reason why no answer has been returned to an English shareholder, who wrote some time ago for a copy of the reports on behalf of himself and others, offering to pay all the necessary and reasonable expenses? Perhaps he thinks silence will be the better policy in this instance, and it would be a pity to compel him to expose his weak points.

MINING IN SOUTH AUSTRALIA.—We have received accounts from Adelaide to the 25th of August, *viâ* Sydney. The new Governor had commenced his administration by a most just and public act. He had acceded to the opinions expressed by the Supreme Court, and had given up the royalty claim upon minerals. Notice had appeared in the *Gazette*, that in future, and until further instructions from England, land would be sold without the reservations previously exacted. The Burra Burra mining shares have increased considerably in value, in consequence of this important measure. They were quoted on the 24th of August at 225*l.*, and some had been sold at 12 months' credit at 300*l.* per share. The various sources of employment daily opening for the large immigrant population almost constantly arriving from England, was causing trade to be exceedingly brisk, and everything appeared to be flourishing. The following is a copy of the South Australian share list on the 24th of August:—

Name.	Price per share.	Name.	Price per share.
Adelaide	£2 10	North Kapunda	£1 10
Belvidere	Nominal.	Parringa	Nominal.
Burra Burra	£225	Port Lincoln	£7 10 to £8
Mount Remarkable	£14 14	Princess Royal	£41 to £42
		Royal Mining Company	12s.

The Australian Smelting Company had been finally formed. Its capital was to be 20,000*l.* in shares, with 1*l.* deposit; one-half to be reserved for Hobart Town.—The colonists at Geelong had been much gratified by the receipt of the Order in Council, dated the 15th of April, 1848, declaring it a free warehousing port from the 1st of August last.—The Launceston journals mention the discovery of coal, at Falmouth and Fingal, of good quality.

CONTRACT FOR COALS.—The committee at the East India House closed their contract on Wednesday last, the 17th inst., for the delivery of 3000 tons of Hartley coal, &c., at Aden, for the service of their steamers. These contracts are always strongly contended for, and many of those who send in what may be termed very low tenders, fully expecting them to be successful, are too frequently sadly disappointed—as we have before stated, too much partiality being shown by the officials; as it is not *price*, but *interest* and favour at head quarters which carries the contract. On Wednesday, the 31st inst., the committee will receive tenders for delivering 500 tons of Hartley coal at Madras.

GOLD MINES IN ENGLAND.

RIGHTS OF THE CROWN RELATIVE TO ROYAL MINES IN ENGLAND AND WALES.

In a late Number of the *Mining Journal*, some remarks were made under the above head, relative to a bar of gold, weighing 3 lbs. 7 ozs., that was extracted from auriferous ores, found in the Cwm-heisian Mine. We also said, that it was well known that our metalliferous rocks and lodes yield gold and silver, although we believed that in most instances in too minute quantities to render them of any commercial value—that, generally speaking, the precious metals were found *only* in the gossans, and that the question might be regarded as an open one, as to whether the weight of gold contained in a sovereign were obtainable for more or less than its value. We are now informed, on good authority, that upwards of 20 powerful mineral veins, or lodes, have been discovered at Cwm-heisian, within about a distance of 900 yards. They are found to contain rich lead and silver-lead ores, blende, iron, and arsenical pyrites, or mundic. All these minerals contain a considerable quantity of gold.

Two mines have been opened in the Cwm-heisian Valley, called the East and West Cwm-heisian Mines respectively. The West Cwm-heisian Mine is pitched upon a group of five lodes, one only of which has been explored to the depth of 40 yards. Two rich courses of lead ore have been found therein, and continue in depth. The lead ores are accompanied by blende and sulphur ores, which, as well as the lead ores, contain a sufficient quantity of gold to pay the cost of extraction.

About 900 yards north-east of the West Cwm-heisian is the East Cwm-heisian Mine, situate on a group of 14 large and powerful lodes, or veins, having many different bearings—the prevailing one being north-west and south-east, which intersect each other within a distance of about 200 yards. As might be expected, under such favourable circumstances, very rich results have been obtained; the veins contain highly argentiferous lead ores, potter's lead, blende, iron, and arsenical pyrites, all of which are mixed with gold. The mine was originally opened as a lead mine, but a small quantity of very rich auriferous ore being found within a few feet of the surface, yielding from 7 to 16 ozs. of gold per ton of ore, induced an inquiry, whether the present intention of working for *lead* should not be abandoned. At first the discovery of gold was considered to be more curious than valuable; but, on further examination, large quantities of the tinstone, and ores taken from the veins at distant points, gave valuable results in gold. The owner then determined to have the mine opened to an extent which should set the question at rest, as to whether it were really to be considered a gold or a lead mine. To this end, a shaft was sunk to the depth of 30 yards, many fathoms of levels were driven, and several hundred tons of ore raised from the workings. For a distance of 200 yards which has been explored, *the masses of mineral, formed by the falling together of so many veins, is upwards of 40 ft. in width, and is found to be of equal dimensions in depth*. Beyond the intersection, both east and west, the veins radiate, and are from 3 to 20 ft. in width, extending from three-quarters to one mile in length, within the limits of the setts.

The result of the foregoing operations has been, to prove that wherever the veins have been opened, they are found to contain gold, both in *depth* and *length*, and that every kind of mineral contained in them is mixed with gold. The whole mass of the veins must be wrought for gold as the primary object, and the lead and silver-lead ores will be obtained at the same time, without extra cost. The gold is remarkably pure, and free from alloy, and will average in value 4*l*. per oz., or 2d. per grain. In order to prove the value of the ore raised, an experiment was tried on 300 tons of it, fairly broken from all parts of the mines. The whole quantity was concentrated into 10¾ tons of washed ore, containing 84,487 grains of gold, or 176 ozs. troy, giving an average of 16 ozs. and a fraction per ton of washed ore, or 281 grains of gold per ton of raw ore: and by carefully picking out the waste and slate from the raw ore, before it was pulverised, it was found that the average might be raised to more than 350 grains per ton.

The foregoing experiments were tried, in order to arrive at a true knowledge of the quality of the ores, and to determine the best methods of extracting the gold from them. The workpeople employed to wash the ores were natives of the district, unaccustomed to the dressing of difficult and delicate ores, such as those containing gold; but had Cornish tin dressers been employed, much better results might have been expected. The average available produce of the gold mines of South America is not more than 250 grains of gold per ton of raw ore. In consequence of the great size of the lodes, or veins, at Cwm-heisian, they can be wrought cheaply, the "country," or enclosing strata, being clay-slate, with occasional floors of elvan, or porphyritic rock; the ground is not costly to drive in, and stands well without timber, and such timber as is required for underground purposes, is obtainable from the woods in which the mines are situate, at a moderate rate.

The Cwm-heisian mines being situate in the bottom of a deep valley, where there is an abundant supply of water, it is estimated that the cost of raising the auriferous ore, and extracting the gold from it, will not exceed, on an average, 72 grains of gold, or 12s. per ton of rough ore; and it is very probable that the amount of the cost will be reduced, when the work-people employed become more experienced in the manipulation of the ore. At all events, the expense of working and raising auriferous ore from mines in this country, will be less than in South America, where labour, tools, mercury, and materials of every kind, are much dearer than in England or Wales. The above-mentioned estimate of 12s. per ton, neither includes the cost of lead work, nor the royalties and duties payable to the Crown; but, whilst these, on the one hand, will enhance the general expenses of working the mines, it is satisfactory, on the other, to be able to mention, that the average produce of gold may be fairly expected to exceed 350 grains per ton, as the underground workings approach nearer to the great concentration of lodes already referred to—strings of gold having been frequently found, and large stones raised, containing from 300 to 500 ounces per ton.

In consequence of the abundance of auriferous ore discovered some time since, at the Cwm-heisian and Berthllwydd Mines, an inquiry was set on foot in order to ascertain the extent of the rights of the Crown to "royal mines"—that is to say, mines containing auriferous and argentiferous ores. It appears that the Crown does not possess the power to enter upon private lands to work gold mines, nor to grant license to any other party to do so, provided the gold be mixed with the ores of copper, tin, iron, or lead; but where these minerals are not found with gold in the veins, then the Crown has full right to the same, and can claim to work such mines on its own account. It should be observed, that the Berthllwydd Mines are held under a grant from the Crown, and the Cwm-heisian are private property.

By the 5th of William and Mary, c. 6, entitled "An Act to Prevent Disputes and Controversies concerning Royal Mines," it was enacted "That all owners or proprietors of any mines in England or Wales, wherein any ore was then, or thereafter should be, discovered or wrought, and in which there was copper, tin, iron, or lead, should hold and enjoy the same mines and ore, and dig and work the same, notwithstanding that such mines or ores should be pretended or claimed to be royal mines, any law, usage, or custom to the contrary notwithstanding." By the third section, however, the Crown possesses the right to purchase the ores of any such mines, after being washed and rendered merchantable, at the following rates, viz.—Ore in which is copper, 16*l*. per ton; ore in which is tin, 2*l*. per ton; ore in which is iron, 2*l*. per ton; and ore in which is lead, 1*l*. per ton; and by the 55th George III., the rate which the Crown should pay for lead ores was altered from 16*l*. per ton to 25*l*. per ton.—(See *Bainbridge on Mines*, page 44.)

The gold discovered at Cwm-heisian is mixed with ores of lead, copper, iron, and iron pyrites; and there being a vast number of mineral veins in the mines, many of them well worth working for gold, though too poor for lead alone, it became important to learn under what aspect these veins would be regarded on the part of the Crown. A memorial to the Commissioners of her Majesty's Woods and Forests was consequently presented by the owner of the mines, setting forth the full particulars relative to the discovery of gold in them, and praying that the Crown would commute its right of pre-emption for a fixed sum per cent. on the gold raised in lands belonging to the Crown, as well as lands the property of private individuals.

The commissioners directed the officers of the geological staff attached to the board to report on the actual state of the discovery of gold; and, it is presumed, being satisfied that the statements made in the memorial were correct, they determined to accede to the request, and signified their intentions in the following terms—viz.: "That this board will feel themselves called upon to recommend the Treasury to require that in the case of the Berthllwydd Mines, and in all other cases of the Crown grants, one-tenth part of the *sale* price, or (where the party working the mines smelts or amalgamates at his own works) one-tenth part of the *value* of all ores, and a further 10 per cent. upon the excess, above 25*l*. per ton, be the rates at which the board should commute the right of pre-emption; and that a clear 5 per cent. be paid from the gold produced from mines in private lands."

The foregoing resolution will be beneficial to the lessees of Crown lands possessing gold in their mines, because the average value of the ores will be far below 25*l*. per ton *before amalgamation*; and it is upon the ore in its raw state that the duty will be levied—so that, in fact, there will be no increase upon the usual royalty of 10 per cent., payable under the Crown grants; but, with respect to lands belonging to private individuals, the duty payable to the Crown will be 5 per cent. on the amount of gold extracted.

LLYNVI IRON-WORKS, MAESTEG—(*From a Correspondent*).—We hear that Charles Bowring, Esq., is about shortly to retire from the office of resident director of the Llynvi Works, the future management having devolved upon C. J. Hampton, Esq., the late manager of the Maesteg Iron-Works. We consider the Llynvi Company fortunate in having obtained the assistance of a gentleman of Mr. Hampton's experience, as his intimate acquaintance with the locality, his practical knowledge of the manufacture of our staple commodity, and his well-known business habits, eminently qualify him for so important and responsible a situation. We sincerely trust that Mr. Hampton (who, for some time past, has had, we believe, the sole direction of the Ynisceedwyn Iron-Works), and his amiable family, will long continue residents of this place.

Original Correspondence.

JOINT-STOCK COLLIERY COMPANIES IN SOUTH WALES—No. III.

SIR,—The subject of the preceding communications cannot be better illustrated than by referring to the published reports and discussions of a company which has recently occupied a considerable space in your columns, and attracted the attention of most persons interested in mining. In analysing the accounts of expenditure, read at the half-yearly meeting of the shareholders, on the 28th of July last, there is some difficulty in separating the permanent from the annual outlay. The amount of the capital involved is, however, so large, as to render even an approximation to it sufficient for the present purpose. Under the heading "Expenditure," in the published report, this appears to be one hundred and seventy-nine thousand one hundred and forty pounds, and is constituted as follows:—

Purchase of mining property	£148,000
Working stock—Plant on colliery at original purchase, 2000*l*.; paid for working stock, 5808*l*.	7,808
Permanent works	5,618
Purchase of lease of wharf at Swansea	290
Purchase of ship	800
Office furniture	328
Railway engineering, Parliamentary and law expenses, engineering, preliminary expenses, 9309*l*.	16,296
Total	£179,140

There is one item in this enormous expenditure that has caused much surprise and speculation, and of which no explanation has been given, and that is as to the 148,000*l*. paid, or due, for the "purchase of the mining property;" for it appears that, although thus liberally "purchased," the shareholders have, notwithstanding, to pay the exorbitant rent of 2000*l*. a-year for it! In the language of Burke, these "grants are so enormous as not only to outrage economy, but even to stagger credibility."

It is but fair and reasonable to presume that, in expending this large sum of money, or in becoming liable for it, the directors were perfectly satisfied that they were making a profitable investment, and that their estimates of prospective revenue justified their proceedings. That this is the source of the present embarrassments of the company, there can be little doubt. Without adding any thing for wear and depreciation, the simple interest of this capital, at 5*l*. per cent., amounts to the sum of 8952*l*. per annum, which, of course, would be paid out of the produce of the collieries. This produce was estimated at 1000 tons of coal per day—or, say, 300,000 tons per annum. In making this estimate, however, two important practical difficulties appear to have been altogether overlooked. The first of these was the possibility of obtaining such a large quantity out of two, or even three, levels, or adits; such a feat far exceeded any thing that had ever been done in the principality, and its announcement was received with incredulity. The actual performance of the company is stated in the report to have been 19,496 tons only, or rather less than 65 tons per day. The second obstacle to the realisation of these dreamy estimates, was the possibility of selling the coal after they had worked it. There has been some difficulty in disposing even of the small quantity already produced, and this would not be diminished, but increased, by forcing sales of such a large additional supply. For some years such an attempt will be unsuccessful, until the demand is very considerably increased, and new markets discovered for it. Taking, however, the figures as we find them, and the produce as stated in the report, it appears that the interest of the money invested (8952*l*.) amounts to about 9s. per ton on the coal produced during the last year. Had the quantity of coal sold amounted to 300,000 tons, this charge on it would only have been about 7d. per ton.

This fact is sufficiently illustrative of what has been said on exaggerated estimates in the first communication, and what has been stated as to the choice of a locality, may be exemplified with equal facility.

The distance of the collieries from the principal shipping port of this company is from 5 to 6 miles; and, although the detailed cost of the coal is not given in the report, the following estimate, it is believed, approximates very nearly to it, and, on scrutiny, will be found to be rather under than above the actual cost:—

Cost of coal at the level's mouth, including cutting, filling, haulage, dead work, timber for props, pumping, &c.	*per ton*	1s 10d
Rent on 20,000 tons—2000*l*. per annum		2 0
Carriage in carts, including turnpike toll		4 6
Shipping, screening, dues, and taxes		0 3
Salaries and expenses of resident director, engineer, shipping agents, overmen, and weighers, 1000*l*., on 20,000 tons		1 0
Salaries and expenses in London—say, 1000*l*., on ditto		1 0
Total		10s 7d

It thus appears that the cost of the coal is 10s. 7d. on ship board at Swansea, without allowing anything for depreciatiation, wear and tear of plant and machinery, &c. Coal, in the condition it comes out of the mine, is called "through and through" or "all through," and the best price to be obtained for it is 7s. per ton. In the committee's report of the 20th of June, the selling price is stated to be only 6s. 9d. per ton. It may, therefore, be safely assumed, that there is at least a loss of 3s. 7d. per ton on the sale of all coal of this description. The most of the coal sold, it appears, is "screened" or "hand-picked," and as the small coal is only worth 3s. 6d. to 4s. per ton at Swansea, it will not pay even the cost of cartage; some of it, however, is sold within a shorter distance of the collieries, at 4s. per ton; but the quantity is inconsiderable, and it is very questionable if this price does more than pay the cartage, filing, &c. However, to be safe, let it be presumed that the quantity of small coal produced in "screening" at the colliery, and at the wharf at Swansea, amounts only to one-fourth of the whole produce, and that the other three-fourths is large coal, it makes the cost of the latter on ship board at Swansea, 12s. 9d. per ton. The selling price of this coal is stated, by the committee, to be 10s. per ton (being one shilling per ton above the ordinary price;) there is a loss, therefore, of at least 2s. 9d. per ton on the sale of the large coal. These losses, it must be remembered, are exclusive of the interest of the capital sunk in this concern, and which has been shown to be equal to 9s. per ton on the last year's produce. Yet, in the report of the 28th July last, it is stated,—"The coals cut during last year were 19,496 tons, and the profit upon it was 3961*l*. 1s. 3½*d*., out of which a dividend of five per cent. per annum, for the half-year might be paid!"

The prospects of this company are certainly somewhat cheerless; yet some good may doubtless be effected by concessions, unanimity, and the adoption of stringent measures to alleviate, if not altogether to eradicate, the existing evils. The present state of this concern is clearly attributable to the exaggerated estimate of prospective profits, by a faith in which the board has been induced to burthen the concern with an enormous amount of interest of capital sunk, and in choosing an improper locality for their mining operations. From the joint operation of both these causes, and from others less prominent, but common to most joint stock companies, the expenses have been so much increased, as far to exceed those incurred by private colliery proprietors, with whom the company must enter into competion, and the inevitable consequence is, that instead of realising a profit, a considerable loss is incurred. Much more might be said on this subject, but it is presumed that enough has been advanced to prove that joint stock companies are not well adapted for the working of collieries, and that their want of success must not be relied upon as evidence of the unproductive nature of the coal-trade of South Wales.

Neath, 13th January. J. RICHARDSON, C. E.

MANAGEMENT OF JOINT-STOCK COMPANIES.

SIR,—Your correspondent, Mr. Richardson, in treating the above subject, appears to possess considerable acquaintance with it. While reading his remarks, I was forcibly impressed with the aggregate amount of loss to which some public companies have been subjected; and, in offering a few thoughts on the subject, it is not for the purpose of creating useless correspondence, but simply to call attention to it more seriously on the part of those interested. It is a common observation, but nevertheless of some import in the abstract, that "joint-stock companies cannot possibly answer." I confess I was formerly of a similar opinion myself; but the more I have thought upon it, the more am I confirmed in my present view of the case—that, if properly conducted, and due care and economy be exercised, they can be made equally successful with any private establishment. Why not? They have in common business transactions the same chance afforded them as any private firm, and, therefore, upon this ground are equal: they have also the same opportunity of procuring equally as good "local management" (I am now alluding more particularly to the iron trade); and if a proper system be pursued, their articles may be manufactured equally as low as any private concern can do, thereby enabling them to go to market with the latter; it is a certain fact, however, that, as at *present constituted*, they cannot compete with private individuals.

Let us take a case in point. We will suppose a joint-stock company, possessing an establishment capable of producing (say) 500 tons of finished iron per week, having also its "London house," and a customary array of "officials" connected with it; we will suppose, too, that upon this make a clear profit is obtained of (say) 5s. per ton, yielding an annual return of 6500*l*. This sum is, of course, divested of all subsequent charges, and, therefore, is to be divided among the shareholders, who represent (say) 10,000 shares, of 10*l*. each—the whole of which we shall regard as "paid-up." The division of the profits thus made will amount to 13s. per share, or equivalent to 6½ per cent. upon the capital employed. But suppose the "London office," with its concomitant expenditure, be dispensed with, any further than as a mere registry-office for the transfer of shares and receipt of dividends, and that the management be confined alone to the local office, or "scene of action"—with this reduction of the establishment, will cease its expenditure, which we will suppose to be 3500*l*.; this sum, added to the aggregate gain of 6500*l*. (making 10,000*l*.) would give the shareholder 7s. per share more, or 20s. instead of 13s.—being equal to 10 per cent. Compare this to a private concern, consisting of four individuals, and having a similar establishment for the manufacture of their iron. We will suppose each of them subscribe 25,000*l*.—thus making the capital contributed by the joint-stock company; but the system of the two being different, entailing upon the latter a less amount of expenditure than the former, a corresponding difference will exist in the annual returns. We will suppose the four individuals in question attend daily at their counting-house, transact their *own* business, and not depute it to a *second* party—thus supplying the place of "middlemen" in joint-stock companies, as well as dispensing with a costly "London establishment." By this means, they will be able to obtain a larger amount of profit—say, 7s. 6d. per ton—which, upon 500 tons weekly of finished iron, will yield an annual return of about 10,000*l*., which, being equally divided, gives to each partner 2500*l*., or equal to 10 per cent. upon the subscribed capital. True, in the latter case, the responsibility is so much greater than that of a shareholder, who is only liable for the amount of his share or shares; but the advantage is likewise greater in proportion—for 10*l*. a public shareholder gets annually 20s.; for 25,000*l*. the private partner gets 2500*l*.—both being in the same degree of proportion; so that, if a joint-stock company be placed upon the same footing as a private concern, and divested of its "auxiliary branches" (and this can be done) the result cannot fail to be equally as advantageous. The effect, however, of the present working of joint-stock companies is more severly felt in a depressed state of trade; for, while the latter are subjected to (say) 2s. 6d. per ton more than a private house in the cost of their article, a private house, making a profit of only 2s. 6d. per ton, would be able to go along, while the company would have nothing; and, if trade receded further, a loss to them is inevitable. If it be an acknowledged fact, that the simplicity of a thing is the perfection of it, why then should there be such a complication of affairs among joint-stock companies? The old leading houses in the trade, whether in the Welsh or Staffordshire districts, who have gradually risen to their present position from comparative obscurity, were not so constituted—in fact, I have never yet heard any reasonable or justifiable argument advanced in support of such a system. Give to them, as much as possible, the nature of private establishments—conduct them as near as can be upon the same principles—endeavour to exercise the same degree of caution, good judgment, and economy—and we shall then have a different state of things among those which have hitherto been noted for recklessness and extravagance; while the shareholder who commits his property to the keeping of others, may rest satisfied that justice will be done, and his interests properly protected.—E. G. T.: *Jan.* 16.

CAMERON'S COALBROOK STEAM-COAL AND SWANSEA AND LOUGHOR RAILWAY COMPANY.

SIR,—In the last impression of your valuable Journal, I observed an account of the proceedings of a special general meeting of shareholders of this company. Amongst the various incidents that occurred at the meeting, one of the most remarkable was the report of Mr. R. Dagleish, wherein I understand him to state, that there are 1300 acres of the Broad Oak vein, 1300 acres of the Faith Mine, and the same amount of acreage of a 9 feet vein of coal under the property on lease to the company in question. Now, it appears to me, with all due deference to Mr. Dagleish's mining experience and qualifications, that he has not given the attention to the subject of his research and investigation which might have been expected from a man of his professional knowledge; for, had he done so, he could not have put forth such misstatements as appear in his report respecting the quantity of the Broad Oak and Coalbrook veins.

In the first place, he states that there are 1300 acres of the Broad Oak vein. On this head I beg most respectfully to differ from him; and, my belief is, judging from the crop of the vein, that not more than from 450 to 500 acres of it exists under the property belonging to this company. Mr. Dagleish also states, that there are 1300 acres of the Faith Mine—by this, I presume, he means the Coalbrook coal; but it is a well known fact, that the whole area of the estate is not more than 1300 acres altogether, and that the Coalbrook veins do not exceed 900 acres. Then comes his 9 ft. vein, calculated at 6 ft. thick; but it is a most extraordinary circumstance, that the oldest miners in the neighbourhood have no knowledge of the existence of this vein; and as they may be reasonably admitted as competent judges of the matter, we must, in charity, suppose that Mr. Dagleish has allowed himself to be misled by the interested misrepresentations of others, instead of judging for himself, or, perhaps, it exists in the *imagination* of the reporter.

Mr. Dagleish recommends the expenditure of a sufficient capital—in addition, I suppose, to that already invested—so as to produce 180,000 to 200,000 tons per annum. I think the shareholders should first inquire what he considers would be "a sufficient capital." For, if I am well informed upon the subject, it appears, that the company has already expended (in what manner is best known to the directors) about 48,000*l*.—a sum amply sufficient for the purposes of the undertaking, if it had been judiciously laid out. He, likewise, recommends the carrying out of certain operations—the advantages of which appear to depend on "the good carbonising quality" of the mines in question; but, as he seems somewhat doubtful on this point, it occurs to me (and I think it will to every one else), that he should have first satisfied himself whether the quality of the coal is of such a nature as to warrant the outlay which his propositions must necessarily entail.

Mr. Dagleish then proceeds to say—"In the event of the mineral ground producing a sufficient quantity of ironstone bands and balls, fire-clay, &c., which will be fully ascertained by the intended winning, may eventually make it worth the notice of the company to establish an iron-works, both for the making of cast-iron as well as for the manufacturing of wrought-iron." Now the existence of any ironstone, in the first place, seems problematical; but to those who are well acquainted with the stratification of the districts, it is beyond all doubt that a sufficient quantity of that mineral does not exist in the measures of the upper series of the South Wales coal-field, to warrant the erection of a cupola of the smallest description.

Mr. Williams (a gentleman who appears well acquainted with the locality) speaks distinctly on the points, and at once enlists our confidence in his engineering experience and capacity. He states that 14,845*l*. would open a new shaft and winning at Court-y-Carne, so as to produce 200 tons daily; and that a further outlay of 7000*l*. on the Coalbrook Works would be sufficient to secure a winning of 150 tons per diem. Is Mr. Williams, however, prepared to execute a contract to that effect? If so, it behoves the company to take such steps as would secure a return for the enormous capital already so injudiciously expended; and, although Mr. Williams's report is not very minute in its detail, it appears to me that the shareholders would be acting wisely by taking into their serious consideration, as the course he suggests seems not only feasible, but likely to lead to a successful issue,

Mr. Dagleish's statements, on the contrary, are too suppositious; but in these times, when mining knowledge is so far advanced, the public require some better foundation on which to embark their funds, and they are justly entitled to it, too. In an enterprise of this kind, the bearings of the case should be distinctly and thoroughly demonstrated by practical experience, not only of mining generally, but local knowledge is equally necessary. The property of the company is undoubtedly a good one; but it has been most woefully mismanaged.—AN OBSERVER: *London, Jan.* 18.

SENTRY BOXES.

SIR,—I have often thought that the sentry boxes, in the parks and elsewhere, might be materially improved by a very simple contrivance, and at a trifling expense. The mode I recommend is, to make the box turn on a pivot, with a view to shelter the soldier from violent winds and rain. I lately conversed with a soldier on the subject, who told me that when the wind and rain set in front of his box, his nether garments were completely wet through. The soldier might himself remedy the evil, by turning the box to the right or left, according to the direction of the wind.—

Respectfully submitted to the consideration of the authorities at the Horse Guards.—A Friend to the Soldier: *London, Jan.* 16.

THE SOUTH AUSTRALIAN COMPANY.

Sir,—In your Journal of the 6th inst., in a report of the proceedings of this body, I observe the question of smelting the ores of the company in the colony has been mooted. At the meeting, the general opinion appeared to be, that it would be beneficial to the company if the ores were converted into regulus, and in that shape exported to England; and one influential gentleman is reported to have said "that certain ores could not be smelted, and some could not be converted into regulus." This is rather a broad assertion, and one which, I believe, very few practical men will admit. During the whole course of my experience, and I have had the management of several difficult ores, I never found any which could not be smelted. It is true the same mode of manipulation could not be applied to them all; and when it is not possible to form a judicious admixture, so as to flux the more stubborn, or throw back the more fusible, as the case may be, a different description of bottom is required, as well as a different treatment, both of the bottom and the ores. I have no idea what the price of coals would be on the spot, or at Newcastle, near Sidney; but I presume smelting-works would be established at such points that the coal might be conveyed to the ore at as small freight as possible.

The principal difficulty with copper ores consists in reducing them to regulus, and obtaining clean slags, or slags with such an inconsiderable quantity of metal in them, that they are not worth resmelting. This once accomplished, the ulterior processes, from the reduction of the regulus to the production of copper, are of no great difficulty—care, moderate ability, and practical knowledge in the manipulation, being all that is required. If, therefore, the company can get over the first and primary obstacle of reducing their ores to a regulus, they will find it infinitely to their advantage to proceed with the further development of the metal. As there appears to be abundance of wood in the colony, by engrafting the German process on the English, and performing the calcinations by wood, I do not apprehend there would be any scarcity of fuel for all necessary purposes. I am not aware of the present method of purchasing regulus; but I recollect, some years since, it was customary for the smelters there to charge the foreign miners the same returning charges as on ore, although the metal had gone through two processes, and those the most difficult, and requiring the greatest care.

The Alten company, who, I believe, were the first foreign establishment who smelted their own ores, found, after a short experience of two years, how much more beneficial it was for them to make cake copper, instead of exporting their produce to England as regulus. The proximity of Australia to India, and the great advantages that they would have over all other countries in exporting their copper to that country, and the early realisation of their capital through this channel, is but one of the many benefits they would derive from making copper on the spot; whereas, by the reduction of their ores to regulus, a considerable saving in freight would be effected, which is, I believe, the only object that would be attained by this partial smelting; while, by the reduction of the ore to cake copper, the company would secure to themselves not only the profits of the miner, but that of the smelter and the merchant.—Alpha: *Jan.* 16.

MINING AND SMELTING.

Sir,—The various communications that at different periods have appeared in your Journal on this interesting subject, have, no doubt, been read with great interest by your numerous readers (more especially by those who are concerned in the various branches of this important trade), and which, on many occasions, have been so ably treated of by several of your correspondents. Although there has been a great deal of fencing and parrying, both on the part of the smelter and miner, as their several interests have been attacked, and a great many able arguments adduced by both parties on each side of the question, I believe the great desideratum is still wanting of arriving, through these facts, at a practical result, and a competent knowledge of the several and actual bearings of the case. Were I to follow each point *seriatim*, it would, I am convinced, be trespassing too much on your valuable space, without adding any further information, or elucidating any fact which would tend to throw any light on this hitherto abstruse and difficult question. I shall, therefore, simply content myself with dealing of the generalities of the case, without entering into any minute details, or attempting to controvert whatever each party may have brought forward. As it now stands, it is a "pretty quarrel," and so I leave it, without further comment. The vast magnitude of interests which are involved in this question, no doubt requires that, before any organic change takes place, affecting either the one or the other, great circumspection and all due caution should be exercised. The interest of the one is so intimately connected with the other, and both are so essentially necessary to each other's prosperity, that it is surprising that, instead of being opposed to each other, long ere this they have not seen their true interests, buried their differences, and, by a firm coalition, mutually benefitted each other. The facts that have principally been brought forward by the mining interest is the unfair method of purchasing the ores, and the enormous profits consequently accruing therefrom to the smelter; while, on the other hand, the smelter denies his receiving anything but a moderate profit, and appeals to the loss of interest on capital, owing to the vast quantities of metal he is always obliged to retain on hand through the various stages, from the ore to the pure copper. With solitary exceptions, although numberless patents have been granted within the past year for improvements in copper smelting, but few of them have been tested in a practical way, or applied to any purpose which could either benefit the producer or cheapen the metal to the consumer. Without entering into their respective merits, it does seem inconceivable that those most interested—the miner and smelter—have not stepped in, and lent a helping and encouraging hand to the inventor. A reduction in the cost of production would naturally lead to an increased consumption of copper; and many poor mines, which are unable now, from the low price of their ores, to compete with their richer rivals, would be enabled to maintain a more stable footing; while the business of the smelter would be placed on a firmer and more solid basis.

One of your correspondents, a gentleman whose talent is well known and admitted by all parties—I allude to Mr. Prideaux—has published many important communications, and thrown out several suggestions on the utility of the development of the different metals in as pure a state as possible. He is a practical man, and not accustomed to publish his opinions before he has tested them by experience. I believe as yet not one improvement that he has suggested, or alteration that he has mooted, has been acted upon, probably from the fear that one change would be succeeded by others, and throw the trade open, but allowed to pass unnoticed, and, I might also say, unheeded, by our inert and plethoric smelting interest. By the present tedious process, the reduction of the ore until produced as cake copper, generally occupies from 14 days to three weeks; some of the patentees profess to reduce this to 24 hours, and to lower the cost from 17*l.* or 18*l.* per ton of copper to 4*l.* or 5*l.* Surely, if there is any practical utility in these improvements, they are worth being adopted; or if, on the face of them, there appears to be any shadow of probability that they are ready only to perform one-half of what they profess, they are worthy of a trial, more especially as they aver that the present furnaces are applicable for their purposes—so that no expensive plant is required; and the proprietors would merely incur the cost of labour necessary for the purpose, and wear and tear of the furnaces. But a very slight loss of copper would ensue, as, should the manipulations fail, they would always be able to recover the metal again, either in the bottom or the slags. Although there is not the slightest doubt that a better principle of purchasing the ores might be adopted, this evil I consider, at present, is unavoidable, as long as the purchasers are a small *clique* of six or seven great houses, who can command the ore market as they please; nor do I believe this will at all be remedied by the introduction of a new monster company, although, on their outset, they may profess to give better terms to the miner, and be content with smaller profits themselves.

Man, by nature, is a grasping individual, and whether the new company be formed of a few private individuals, or thrown open to the public, I do not see how, in any way, the miner's interest can be benefitted, but consider it will only be one bold step more to the "great leviathan" which at present he so much, and not without reason, complains of. On the other hand, although the smelting interest have been till lately so passive, and have allowed their opponents to have a full fling at them without contradiction, it is not to be inferred from this that they have tacitly admitted all the statements that have been advanced against them. We should rather judge from this, that an over excess of caution, for fear of discovering the mystery of their trade, has been the cause of their silence. From some slight acquaintance with the trade, and a practice of some years in the smelting processes, combined with the results of experience, gathered both in English and foreign works, I have arrived at the conviction, that the profits of the smelter are not so enormous as the miner imagines, or would lead others to believe. Setting aside the interest of capital, which, in these difficult times, is of no little moment in establishments conducted on such a gigantic scale as those in Swansea, there are losses from bottoms breaking, absorption of copper, resmelting of slags, &c., which only the smelter, and those immediately connected with these establishments, can have the slightest conception of. That fair, and probably, as times go, more than average profits are made, and that enormous ones have been made, I do not think any one will contradict; but, at the present moment, I believe, if the interest on capital laid out on the one was considered, as well as the interest due from the plant, together with the constant command of ready money required by the smelters, was fairly laid before the mining interest, they would consider that body not so much to be envied. It has been affirmed that operations, when conducted on a large scale, are always more profitable than those of a lower grade; this, though in general an admitted fact, I do not conceive, in every case, will hold good; and I believe a small smelting-works, economically conducted, would pay proportionally as great a profit as any of the larger works. None of the works used for the reduction of lead, zinc, or the other metals, are of such magnitude as those for copper. These smelting-works are all on a small scale, and I never heard of any establishment where they were not paying more than tolerable profits. Is it not possible that, as they smelted in smaller quantities, and were enabled to realise their metal as soon as made, they did not require any great outlay of capital to purchase ores, nor had they, for months, the interest lying idle on their hands? In many foreign establishments, ores are smelted from the mines at fixed rates, the copper being returned to them. Were the smelting establishments to return the copper to the miner, after receiving a reasonable price for smelting charges, small parcels of copper would be thrown into several hands, a greater profit would accrue to the miner, while the consumer would benefit by the competition, instead of being obliged, as now, to purchase at a market fixed by six or seven sellers, who meet at certain periods, and fix the price as their caprice or necessity commands.

From these premises, I am led to believe that the interests of all parties, excepting the monopolists, would be benefitted were small smelting establishments to be formed to smelt the produce of the different mines at a fixed rate; and this might be effected by several of the mines combining, and fixing the plant at such a convenient distance as to be within the reach of all, taking care, at the same time, to construct their establishments so as to avail themselves of any of the new improvements that might offer; and when we see small smelting establishments abroad receiving their materials from England, and paying 17*s.* to 18*s.* per ton for their coals, and realising handsome profits, there can be little risk in our mines following their example.

These establishments are at present under the direction of foreigners, and worked solely by native workmen; these are men who have had a good theoretical education, and subsequently attained the practical knowledge necessary to manage the works, which they now so ably superintend. I am induced to make this remark in consequence of a notice from one of your correspondents, "Smelter and Refiner," who would lead us to infer that we are, both in mining and smelting, above all other nations. If he had ever travelled he would have seen that, especially among the Germans, if he discovered some charlatans, and those are found in every clime and every profession, the great majority of the mining and smelting superintendents were not only men of theory but of practice; and, on searching the annals of mining, he would find less waste, recklessness, and spoliation of capital in a century there, than is to be seen in England in one single decennium: while, on consulting those of smelting, he would discover it was practised there as an art and mystery long before it was known here—in fact, that it was introduced into this country, and first practised here, by Germans. That England has produced some men of talent in these branches is not to be questioned; but the host of practical scientific works published in Germany on these subjects, will prove where the greatest amount of knowledge lies; if in England, I am sorry to say, the light has hitherto been hid under the bushel, instead of blazing forth its illumination to the world. Werner, the great geologist, was a working miner; and I need, at this present day, only allude to Karstens, Platner, Lampadius, Sefström, and a host of others, who are all practical as well as scientific men. How many of our miners at present are aware of the simplest rudiments of geology and mineralogy, or our smelters of chemical combinations? That they possess more energy, perseverance, and determination than foreigners, I willingly admit; but there are men on the continent who possess as much practical ability as the best in England, with an infinite deal more scientific knowledge.

I do not profess to have thrown any new light on the subject; but, as a practical man, I have considered it my duty to obtrude on your columns with these remarks, trusting they may be found of some little utility to those who are so deeply interested in the solution of this knotty question. *Jan.* 3. C.

ON METALLIC DEPOSITS.

Sir,—* * * * But I now pass on to a subject more worthy of my pen, ink, paper, and intellect—*i. e.*, an inquiry into the truth or fallacy of the doctrines of Mr. Hopkins, on metallic deposits in alluvious, and the efflorescence of metallic bodies thereon, giving the results of my own experience of a pedestrian journey and rambles in Mexico, Peru, Texas, and the frontiers of California, in 1842-3. Mr. Hopkins states, in one of his papers on this subject—"That because the alluvial gold deposits are entirely derived from the subjacent granitic rocks, through whose substance the precious metals are disseminated in an impalpable and invisible state of division, it is vain to mine for them in the schorlaceous, slaty, or plutonic formations; and that, as these alluvial collections originate by granitic disintegration with subsequent metallic aggregation of small particles into masses by a process analogous to efflorescence, the idea of the existence of distinct auriferous lodes, metallic or mineralised, is futile and illusory." This being about the sum and substance of those ideas and remarks of Mr. Evan Hopkins, F.G.S., with whose statements my own knowledge clashes, I shall content myself with its matter as the textual object of a separate paper, "On the Primitive Locus, Condition, and Origin of Alluvial Deposits of Native Gold," in your next Journal—merely premising now, that I am acquainted with the existence and locality of a mineral lode of gold, platina, and cinnabar, of immense extent and richness, whose matrix is a ferruginous quartz, and not granite—to work which the Anglo-Californian Factory and Gold Mining Company is now forming.

London, Jan. 17. Radlinski.

[Count Radlinski has favoured us with a long and very learned commentary, on the subject of agricultural chemistry; but as its publication would lead to a discussion of greater length (and, we fear, of too personal a nature) than we are desirous of encouraging, we feel compelled to decline its insertion. We shall be glad, however, to receive a continuation of the Count's remarks on the matters referred to in the preceding letter.]

THE COUNT RADLINSKI AND Mr. MITCHELL.

Sir,—Your correspondent, the Count Radlinski, in his communication in your last Journal, states, that the Messrs. Mushet, others, and myself, have become involved in that which he is pleased to call "ferruginous mysticism and error," owing to our having mistaken theories for facts, and dealing in the unreal, rather than the real. For my own part, I must entirely deny this. If the count will read my papers on iron, he will find a mere statement of experimental facts—so that how he can have arrived at the conclusion (most unwarrantable, by the way) to which he has, is, to say the least of it, unaccountable. John Mitchel.

Kentish-town, Jan. 15.

AGRICULTURAL CHEMISTRY.

Sir,—The able and most unequivocal elucidation, illustrating the question at issue, relative to the functions of the roots and leaves of plants, in your last, from the pen of Dr. Murray, renders it unnecessary to enter further into this subject. I have made hundreds of experiments, in different climes, on plants, fed respectively in terrestrial, aqueous, and aerial elements, corroborative of the facts brought forward against the leaf-absorbing doctrine. My object is now simply to give a hint to those who have any regard for their reputation, as *correct* investigators of natural truths, not to enter into the arena of scientific discussion, without being well prepared to maintain their position. To jump headlong from a cavalistic propensity, must not only lead to a defeat, but will tend to destroy confidence in other questions, in which such correspondents might have enjoyed heretofore some degree of respect.

Mr. Mushet very properly confesses, "Whether the plant absorbs by means of its leaves, or through its roots, the carbonic acid requisite to furnish it with carbon, seems to me difficult to determine. I see no reason to suppose that vegetables derive any of their carbon from the soil." Yet he had the assurance to state, "that leaves not deriving their carbon from the atmosphere, is an absurdity manifest to the dullest comprehension; and that no one can attempt for a moment to uphold such an impracticable conclusion." I strongly recommend Mr. Mushet, for his own sake, as well as for the character of your useful Journal, not again to commit himself on this subject—at least, until he has more carefully analysed and ascertained the composition of rocks, the sources of the great beds of carbonate of lime forming daily from the springs of the primary rocks, and innumerable other kinds of natural production, whence carbonic acid gas is daily evolving and combining with the subaerial compounds; and again condensed and distributed in the shape of rain over the surface, also to determine by direct experiments the opposite functions of the two extremities of plants—in short, not again expose himself until he understands, *de facto*, the physiology of vegetation.—J. L.: *Bathwick, Jan.* 16.

FUNCTIONS OF THE FOLIAGE.

Sir,—I entirely disagree with Mr. Mushet's opinion on the physiology of the leaf, as propounded in your last Number. There is no experimental evidence whatever to prove that atmospheric nitrogene, &c., is absorbed by the foliage. Mr. Mushet's experiment with the pansy is only another version—the *crambe repetita*, of Van Helmont's willow. I presume the "beautiful American white rose" referred to is the variety of the "Austrian briar," called the *Scotch rose*, abundant on sandy shores and downs. It is nothing to the purpose, and the experiments of Baron Charles Sprengel show very clearly that, even in the most sterile soils, the materials which constitute the food of plants obtain in a greater ratio than could have been by possibility supposed—extending even to the phosphate of lime.

Portland-place, Hull, Jan. 17. J. Murray.

THE POETRY OF SCIENCE.

Sir,—I cannot but think that your clever and critical correspondent, Le Comte Radlinski, is sufficiently severe in his censures. My share is not much, and Mr. Hunt is well able to defend himself. I thought I had sufficiently qualified the expression he quarrels with, but find I have been mistaken. Monsieur Le Comte seems to me, however, to commit the very metaphorical delinquency he condemns as an error in others; thus we read "gneiss is granitic infancy!" He seems to have drawn his conclusions generally from airy nothings, before Mr. Staite's new battery is revealed to public view, or the principles of its economy enunciated. I cannot but presume, therefore, that he is at once precipitate and premature—*nous verrons*. I think more highly of M. Le Comte's scientific attainments, than to doubt his ability to adjust the electrolytic arrangements he is pleased to consign to me. I shall have soon to return to the electro-light, in reference to a recent lecture on the subject. J. Murray.

Portland-place, Hull, Jan. 17.

THE POETRY OF SCIENCE.

Sir,—I acknowledge the favour conferred upon myself, and no doubt upon your mining readers generally, by Count Radlinsky, in his explanation of the Greek word, Ποινη, and its pronunciation. The modern Athenians soften the poy-he-ho, into paw-hee-hoo. I regret that ideology should have led me into ferruginous mysticism and error. Will Count Radlinsky condescend to lead me out again, or, at least, point out the error, if not the "ferruginous mysticism"—an expression which I presume is ironical? Possibly the pebbles, the mica, and the quartzose debris were overflowed by, and incorporated with, the fluid granite, just as furnace cinder on a small scale, and lava upon a large scale, will overflow, and enclose pebbles and other substances, cooling down before the included matters have undergone fusion. However, as I have seen a living toad taken out of a block of granite, I cannot conceive that the granite could ever have been igneously fluid, unless the toad found therein belonged to the salamander tribe. Gneiss is granitic infancy; perhaps, the toad was infantine gneiss.—R. Mushet: *Coleford, Jan.* 15.

THE POETRY OF SCIENCE.

Sir,—Your correspondents seem disposed to make this subject a prominent theme in your Journal. Under that head a letter appears in last week's Number, which I read over at first with little attention or interest, until I found at the end a most magnificent signature, "Chevalier Gustav, Count Radlinski," dated from College-hill, City. I read the letter over again. In the principality, our bleak hills and quiet valleys are more favourable to the indulgence of poetic fancies and ideology than the noise and bustle of Upper Thames-street. Besides the poetry of science, we have poetries of names, of associations, of motives, of interests, of commerce, &c. I thought to myself, this chevalier count must be interested in gas-works, or collieries producing good gas coal; but a remarkable passage in the letter set my ideology to work, and I indulged a little in poetic fancies. The chevalier, after some remarks upon Mr. Hunt's lecture on the Poetry of Science, observes—"It is something of this kind of ideology that has involved Messrs. R. Mushet, Mitchell, D. Mushet, Leighton, Ferreus, Radlay, and others, in ferruginous mysticism and error." The names of the writer of this passage gave my fancy a flight to Sweden, Russia, and Poland; while the address brought me back to College-hill, a quiet little street, not far from the Steel-yard. The count might possess property in Sweden or Russia, abounding in iron ore, or his friends might. He or they might be engaged in the manufacture of iron, or he himself might be simply interested in the importation of Swedish or Russian iron into the United Kingdom. He himself might have been indulging in ideology, and the idea had occurred to him, that if Messrs. R. Mushet, Mitchell, D. Mushet, Leighton, Ferreus, Radley, and others, persevered in their ideology upon ferruginous subjects, the importation of Swedish or Russian iron into the United Kingdom, or the colonies, might, in time, become unnecessary. The insertion of this letter in your next Number may direct the attention of Messrs. R. Mushet, Mitchell, D. Mushet, Leighton, Ferreus, Radley, and others, to the letter of the Chevalier Gustav, Count Radlinski. I trust that my condition may, by some means, alter for the better very soon.—Haiaen Cymry: *Aman Vale, Jan.* 16.

WATER-WHEELS.

Sir,—The interest which I feel in reading your paper induces me to offer a few remarks in answer to your correspondent, "Water-Power." I think the proper height wheel for a 20 ft. waterfall is 19 ft., allowing 6 in. for the "gooseneck," or head, and 6 in. for clearance in the wheel-pit; for, if the wheel should *wade*, so as to form a vacuum in the buckets (which is generally called "airing") it will deter the wheel one-eighth of its power, which has been proved by a wheel going seven strokes per minute, immediately increasing a stroke per minute, when the "polrose" was cleared, and of this I have every-day proof in this mine. Secondly, I find 6 inches declivity in the neck beneficial, that the water may arrive at a greater velocity than the wheel is going at, and impinge smartly into the buckets in a contracted stream, leaving room for the air to escape at the same time, without blowing out the water. In laying on the water on a breast wheel, there must necessarily be a drop before the water becomes effective, and that will be, more or less, according to the velocity of the wheel—thus, I have seen water dropping nearly 2 ft. before it became settled in the bucket, and hence I consider water brought in below the centre of a wheel to be of little use, for by the time it is settled in the bucket, it will run out again. I consider the best velocity for the outer edge of a wheel to be from 7 ft. to 8 ft. per second, and I have proved that the same water driving two stamps of the same size 4 feet per second, will drive either of them 8 ft. per second. Lastly, supposing the ladles, or buckets, to be full at centre, they will begin to discharge half-way down, and thus the 30 ft. wheel will be discharging sooner than the 20 ft. wheel; and, to say nothing about extra friction on the journals, or beating the air with a monster wheel, overcoming *vis inertia*, or the disposition to remain quiet, &c., I should prefer the little wheel. All the calculations about leverage must go for nothing, for what is gained in power is lost in time—the water will do the same work when conducted gradually down from the same level.

Wheal Vor, Jan. 12. J. B. Wilkin.

MACHINERY FOR CLEANSING ROADS, OR WAYS.

Sir,—In your last week's "list of new patents," I notice one for "cleansing roads, or ways;" and having, at one time, had an intention of including a description of a machine, for a similar purpose, in my specification, which, however, was for certain reasons withheld, and as I have had enough of this sort of thing for the present, I herewith enclose a short description of the principle of the machine, or apparatus, which, if you deem proper, you may publish at your convenience. On noticing, as I was passing along one of our crowded thoroughfares, that the present system of cleansing the streets was attended with great inconvenience, it occurred to me, that if a skeleton carriage, with one range of scrapers, and two or three

brushes, placed *obliquely* across a frame, so as to be brought in contact with the ground, was drawn along the street in the same way as other vehicles, the dirt might be carried off to the sides, without any inconvenience, or obstruction, to the traffic, and at a far less expense than at present. I should think that the proper angle of obliquity would be about 45°, but that could easily be determined; the scrapers to be placed in the front range, their edges lapping one over the other a little, to prevent the dirt from getting past them; the brushes to be placed a short distance apart behind the scrapers, both scrapers and brushes to be so constructed, that they would adjust themselves to the inequalities of the surface of the road, and set so as to throw the dirt towards the "near side." The operation of cleansing a street with such a machine would commence about midway of its breadth, and two or three turns each way, according to the width of the street, would deposit the dirt in the channels, from whence it might be removed in the ordinary way.—J. Weston: *Portland Town, Jan.* 16.

THE ISTHMUS OF PANAMA.

Sir,—In consequence of the late remarkable discoveries of gold in California, the eyes of all the world have been directed to those parts; I, therefore, consider that the present period is very favourable to lay before the public an idea I have entertained for some years past, but have considered hitherto impracticable, on account of the little interest it has taken in anything relating to a traffic across the Isthmus of Panama. I am fully aware that many attempts have been made to make a canal across the isthmus; but the expense of such an undertaking, and the difficulties it presented, have been sufficient to prevent any company from entering upon such a hazardous speculation. I, therefore, conceived that the best and cheapest method of establishing a good communication between Chagres and Panama would be by a railway, of sufficient strength to carry iron vessels not exceeding 500 tons burden with their full cargo across; the vessels could easily be taken out of the water by means of a patent slip, in a properly constructed cradle, and travel across the country at a speed of, say, five miles an hour. One line of rails would be quite sufficient for that purpose, and one slip at each extremity. A line of packets, all constructed of iron, might be established between this country and the Pacific, and by that means a most lucrative trade carried on, which now is next to impossible, on account of the tedious and expensive voyage round the Cape of Good Hope, or Cape Horn. No doubt the novelty of such an undertaking, and the difficulties it presents to any casual observer, are likely to operate against it; but I can fully demonstrate that the engineering difficulties are few, and that properly constructed iron vessels are amply strong enough to travel by land, as well as in their proper element.

London, Jan. 16. T. A. E.

WEST OF ENGLAND STEEL COMPANY.

Sir,—In your Journal of the 14th inst., are a few remarks on a proposed new company for manufacturing steel, in the West of England, with peat and iron ore, both found in that district. Although it is rather soon to prognosticate, before one has seen the prospectus, or knowing who any of the parties may be, yet it appears to me to be one of the most feasible speculations that has for a long time been proposed, and one, if carried out in an *economical* and *business-like* manner, may become a most profitable investment. The fact that peat is a fuel with which iron is manufactured on the continent, is now becoming more generally known in England, and it is satisfactory to hear that enterprising individuals are availing themselves of this, to establish a manufacture of an article for which we are *now entirely dependent on foreigners*, and which *we must have at any price*; it is really a wonder that, hitherto, none have opened their eyes to the fact, that while we are annually exporting to Germany alone, upwards of 40,000 tons of inferior pig iron from Scotland, under the price of 45*s.* per ton, we are, at the same time, importing above 20,000 tons of *good* bar iron from that country, Russia, and Sweden, a great portion exceeding 35*l.* per ton, and this going on whilst we possess every requisite knowledge, capital, fuel, and minerals, for making iron at a *fourth the price*, of equal quality to that for which so high a price is given. The charcoal in many districts on the continent, requisite to make a ton of pig iron, costs upwards of 4*l.*; and this pig is refined and puddled with charcoal at the same dear rate, whilst sufficient peat-charcoal in Devonshire, will not cost 2*l.* per ton of pig: and I well know, that in works using peat, 9 tons will puddle 10 tons of iron; so it is easy to perceive that the first rate quality of iron may be made in the west of England, at a cheaper rate than on the continent, provided the ore is obtained at a moderate price.

Should the proposed company's object be to make steel direct from the ore, using the carbonate instead of the oxide of iron, they will still, in the price of fuel, have an advantage over our continental neighbours, as, doubtlessly, they will provide themselves with as experienced workmen, probably knowing that a *very slight* variation in the size of the furnace, or proportions of the ores, will cause to be produced cast-steel or cast-iron at pleasure. I make these observations, not from theory, but from many years' practice in erecting and working furnaces and charcoal forges, and should they be thought worthy a place in your Journal, they are at your service.—E. K.: *Jan.* 17.

THE ELECTRIC LIGHT.

Sir,—The generation of light for practical purposes by currents of electricity having been before the public for some time, creating general interest, as far as perfecting the means for its propagation are concerned, a few remarks upon the difficulties connected with the manipulation may be interesting to many of your readers, particularly as the majority of the public have little opportunity of investigating the subject for themselves, in the manner in which every application introduced to them ought to be examined. At present, scientific men have not given either the result of their prior experiments—the subject having for some time been a laboratorial research—or their opinion upon the efficiency of the present light for its intended general application. Most of the public, who are not exceedingly intimate with the subject of electricity and the chemical development of voltaic currents, are in the dark, and only able to form an opinion from a casual observance of the light, either in a lecture theatre, or from the summit of some public building.

I am the more led to make the present communication on the subject through the medium of your Journal, from the circumstance of there being two letters in your publication of Saturday week; one signed "J. Murray, Hull," picturing the advantages of the light in glowing colours, for many applications, and, with a prophetic spirit, announcing what it will be at a future day. Dr. Murray may be right in his conjectures as regards the future—that is to come; but as regards the present—the proposed means—quite out of place.

The public do not require to be told, that the light obtained by the combustion of charcoal between the two poles of a battery is surpassingly brilliant; all the world knows that, and also knows that hitherto certain difficulties have prevented its adoption—the same difficulties which at present have stopped the career practically of the application of electro-magnetic force as a moving power; they require to be satisfied, before credence can be given to any communication, of the removal of any practical difficulties before existing.

The second communication, signed "John De la Haye, Liverpool," assumes quite a contrary character; rather enumerating some of the existing difficulties, and seeking for more explicit information upon these important obstructions to its utility. Having been engaged experimentally with electricity for some years, and during which time the present subject has, for many months, occupied my attention, the following points may be considered as having been carefully investigated. It is well known, that the illumination of towns by this means was proposed, under the name of "artificial suns," by M. Gaudin, of Paris, who very elaborately described his plans. The means, however, employed (a battery) involved too great an expenditure of time and material, independent of the skill required in the various manipulations to realise its proposed utility. Subsequent schemers have tried the same thing—not once—not twice—but many times, and failed, the cause of failure being the battery. In this item, therefore, the great difficulty exists, and to it public attention must be directed.

The obtaining a light is not new—the proposed illumination of towns is not new—the adjustment of the poles is not new—and for these points no patent can be sustained; they are already in every body's hands. But a patent may be sustained for a battery, provided it is new, and does not infringe any of the many published forms. Now, the difficulty connected with the use of all metallic combinations in a battery is the combustion of the metals when the poles are placed in what is called short circuit—necessary to produce the flow of the current, and also necessary to produce the development of the light; the energy of the battery decreasing from this cause (the neutrality of its elements) in a certain ratio, proportionate to the length of time the battery is kept on short circuit. In a self-sustaining battery of 24 elements, giving a deflection upon a galvanometer needle of 65° at first, if the poles are closed for only five hours, the diminution in the current amounts to 45° actual loss, the galvanometer indicating only 10°. Now, whether the battery be self-sustaining, or otherwise, this loss will be incurred, and, therefore, its illuminating property will decrease according to the length of time required in its constancy of action. A further combustion, although of minor importance on account of mechanical adjustment, takes place at the two carbon poles, highly deleterious to uniformity of brilliancy.

From these observations, it will be seen, that the two difficulties are, combustion in the battery and combustion of the poles; and, until these are entirely obviated, the light is not perfect; neither is it new. With regard to the illuminating powers of any battery, the brilliancy of the light obtained is not in proportion to the increase of intensity—40 elements giving nearly the same amount of illumination evolved by double that number of elements. The brilliancy is almost entirely dependent upon the surface—40 elements, of double the former area, producing nearly twice the illumination. This fact, therefore, in any of the present combination of batteries, becomes a formidable objection, not only from the expense attending their construction in every sense of the word, but from their necessary colossal dimensions. Such are some of the difficulties connected with the application of this subject; and I must most distinctly affirm that, in the manipulations set forth before the public by Mr. Staite, they still exist in their most glaring form unabated. The so-called "new battery" is now specified, without originality, embracing in its action all the entailments of the foregoing errors—added to which, a most expensive manipulation, without any possible remuneration. Be it what it may, it must now form the buoy of hope for the light company, else little success will attend their undertaking. N. J. Holmes.

General Telegraph Company, Adelphi, Jan. 17.

CORNWALL RAILWAY—No. III.

Sir,—"Another Reader," in your Journal of the 6th inst., has undertaken the defence of the engineer of the Hayle Railway against my incidental animadversion. He says, "in common honesty to Mr. Thomas, I might told the whole truth—viz.: that the Hayle Railway, *as it is (!)* is more a specimen of the engineering of the committee than of the engineer." "Another Reader" takes it for granted that such is the truth; but, previously aware of the fact, that the engineer has taken that ground of defence, I am not so ready to admit it. It is very natural for a man, after committing a notorious blunder, to seek some refuge against the charges to which it must expose him; and it is probable that such is Mr. Thomas's conduct in the present case. It is well known that, when a railway, or other company, engage an engineer, they rely on him for direction as to the course to be taken in all matters relating to the execution of the work, and it would be a novel thing for an engineer to be employed to construct a railway against his declared judgment.

Whatever were the nature of the inclinations of the line as at first planned, it is very probable that the engineer recommended the line as it now is. If he did not, and the committee insisted upon such a wretched line, it was his place to tender his resignation, upon the ground, that to be a party to such a work would entail everlasting disgrace on all parties concerned. That the line was originally intended for a *horse road*, is not a sufficient justification for the current expenditure involved by the present state of things—the stationary engine, the three inclined planes, the numerous crossings of roads, &c. It is certainly a stigma on the engineering talent of any person to be the tool of a committee so stupid, as "Another Reader" would have the Hayle Railway committee to have been.

"Another Reader" also defends the same gentleman, with respect to the "Central line." Now, if that line was a good one, I think we must give the credit for its quality to Capt. Woolcombe and Col. Landmann, who, in 1836, marked it out, with the exception of some parts where deviations were made, in 1845. The gradients were good, and the expense of construction moderate; but there was one character ascribed to it by a "Cornish" man which it in some measure deserved—*i. e.*, that it was too fearful of the towns! As to my ability to give an opinion on engineering in comparison with Locke, I will only say that an engineer is not necessarily the best man to lay out a line, of which the sad errors made by Brunel and others are a sufficient proof—errors which the most ordinary judgment in a *mine agent* would have avoided. More about the Central hereafter.

I said, in No. 2, that at the end of the session of 1845, there was no bill for a railway through Cornwall before Parliament. Owing to the bad engineering by Capt. Moorsom, in 1844, or to the influence of the Great Western and South Devon directors, that gentleman was superseded by Mr. Brunel, who was appointed engineer of the Cornwall Railway. He commenced the survey almost immediately upon his appointment in July or August, 1845, by a very numerous staff of surveyors—such a staff as the Central party would not think of employing. Mr. Brunel never cares about *expence* in any work he undertakes.

No engineer is so extravagant; but, in the present instance, the extraordinary number of surveyors employed seemed warranted by the anticipated opposition from the Central party, which rendered it necessary that the plans and sections should be *perfectly correct*. It is to this prudence of Brunel that the success of the line is, in a great measure, to be attributed; for, had any material error been found by the numerous testers of the work, the bill brought in early in 1846 would have been defeated. His surveyors were described as being as "thick as ants," and the work was well done. In this respect Mr. Brunel did well. When the bill came before Parliament, everything in his work sustained the ordeal of the Committee of Standing Orders, and the bill passed into law in the session of 1846, to the great temporary joy of the officials, solicitors, bankers, and all the various individuals who were using all diligence to get appointments under the company, and many persons are said to have received promises of situations. Unwilling to encroach too much on your columns, I must reserve what I have further to write for future Numbers of your Journal.

Redruth, Jan. 17. A Reader.

CUNNINGHAM AND CARTER'S PNEUMATIC RAILWAY.

Sir,—Having noticed the favourable remarks relative to Cunningham and Carter's Pneumatic Railway, which appeared in your columns a week or two since, I, with a couple of friends, went on Monday last to see it, and although I had previously formed a rather unfavourable opinion of their arrangement, principally on account of the number of air-engines that are employed, yet I must confess that the performance of the model was highly satisfactory; all the feats of starting, stopping, reversing, &c., that could be performed by a locomotive, were performed with this model. Whether this or Mr. Weston's is to be *the* plan, I will not venture to say, but I certainly think that it lies between them. Those who can make it convenient to visit the exhibition will, I feel convinced, have *some* faith in the ultimate success of the atmospheric system. A. C.

Fleet-street, Jan. 16.

ABANDONMENT OF THE ATMOSPHERIC RAILWAY SYSTEM.

Respected Friend,—The prediction of the mass of scientific men have at length been verified, by the total abandonment of the atmospheric mode of traction on the South Devon Railway—predictions which were not listened to, in spite of the most demonstrative proofs that the longitudinal valve would fail. There seems now to exist as much empericism in mechanics as in any other branch of science, and the mechanical emperic succeeds in palming his *schemes* on shareholders, as easily as when human life is at stake; while the *inventor*, who appeals to facts and to reason, is left without encouragement. But surely this is not to continue; "the right will come uppermost," and the subterfuges of men who seek their own interests at the expense of others, brought to the light of day; but so long as railway shareholders will place unlimited confidence in a few engineers, who may gain a *name*, by having had greatness thrust upon them, without having ever *invented* anything (I never saw a catalogue of the *inventions* of the eminent engineers), so long will they suffer in the losses of immense sums, which they are compelled to supply for the benefit of those interested. Had the directors of the South Devon Railway offered a premium for the best plan for propelling trains, and authorised a committee of scientific men to expend a few thousand pounds in experiments, the result would have been somewhat different; such a mode of proceeding would have been an act of justice to the shareholders, to the inventor, and to the public. Yet even now it is not too late to adopt this plan—of course, by another company, who might adopt it without injury to the shareholders; but the failure of the long valve will necessarily cause many shareholders to hold the name of the atmospheric railway in horror; so that the eminent engineers have left the question more difficult to be solved by the mode in which they have meddled with it. The question may here suggest itself—why do not the members of those bodies who pretend to be united for the purpose of furthering the progress of mechanical science, undertake the solution of this problem? But, I presume, it may be answered, that they do not patronise any new invention, except *after* its value has been practically tested, in such a manner as to leave no room for the most sceptical to doubt the principle—that is, they take the inventor by the hand when he is in a position to treat their former opposition and present encouragement with equal scorn. Inventors of Britain, I ask, is this not the case? Is it not a fact, that mechanical science progresses in spite of the opposition of men who have a name, rather than by their aid? If so, we may hope that the scientific powers that be will one day resign, and give their places to honest men.—John De la Haye: *Liverpool, 1st mo.* 15.

P.S.—"F. G. S." is somewhat hypercritical in his remarks on the term *contact*, in alluding to my brief description of the electric light. It is well known that the points of carbon do not *touch*, but there is an *electrical* contact, and it is when this contact is broken that the light disappears. I thought I was sufficiently explicit for scientific men.

NEW PATENTS.

R. Laming, Clichy la Garonne, near Paris, France, chemist, for improvements in the modes of obtaining or manufacturing sulphur and sulphuric acids.

W. Betts, Smithfield-bars, distiller, for a new manufacture of capsules, and of a material to be employed therein, and for other purposes.

G. Williams, Tipton, Stafford, forge manager, for a certain improvement or improvements in preparing puddling furnaces, used in the manufacture of iron.

C. H. Greenhow, London, civil engineer, for improvements in atmospheric railways.

R. Dugdale, Brompton, Middlesex, engineer, for improvements in hardening articles composed of iron.

A. Barberis, Leicester-square, engineer, for improvements in spinning silk, and in the construction of swifts, and in the arrangement of apparatus for winding silk and other fibrous substances.

J. B. F. M. Cline, Havre, France, engineer, for improvements in steam-engines, and in the machinery for propelling vessels.

W. Martin, St. Pierre les Calais, France, mechanist, for certain improvements in machinery for figuring textile fabrics, parts of which improvements are applicable to playing certain musical instruments, and also to printing, and other like purposes.

P. A. Godefroy, London, chemical colour manufacturer, for certain improvements in dressing and finishing woven fabrics.

E. Buchler, London, merchant, for improvements in the manufacture of boots and shoes, also applicable to other fabrics.

J. Hamilton, London, civil engineer, for improvements in cutting wood.

J. F. Bottom, Nottingham Park, Nottingham, lace dresser, and J. D. Dunnicliff, of Hyson Green, Nottingham, lace manufacturer, for improvements in dressing or getting up fabrics of cotton or silk, and of cotton and silk combined.

F. A. Calvert, Manchester, mechanist, for certain improvements in machinery for cleaning and preparing cotton, wool, and other fibrous substances.

T. Newcomb, Bermondsey, machinist, for improvements in furnaces.

C. M'Clellan, Larch Mount, in the liberties of the city of Londonderry, for an improved corn mill.

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

I. Moses, trading under the firm of E. Moses and Son, Minories, London, the sternophylon, or shirt and chest protector.

C. O. Wilckens, and R. Hesse, James-street, St. Luke's, compound wrench.

J. Young, Wolverhampton, lock.

G. D. Ryder, Grace Dieu Warran, Leicester, double bow suspension spring for carriages.

C. Rickets, Agar-street, Strand, economic gas cooking stove.

T. Nash, Jun., Southwark, painters' brush.

C. O. Wilckens, and R. Hesse, James-street, St. Luke's, marginal seal stamp,

J. Evan, Warrington, steam valve.—*Mechanics' Magazine.*

Mr. M'Connell, the superintendent of the London and North-Western Railway, has constructed what he calls a "deflectometer," its object being to test the deflection of the rails under the various weights of engines, the better to determine on the structural strength of permanent way.

That section of the South Staffordshire Railway extending from Lichfield to Walsall is now ready for opening.

The Line between Drogheda and Castleblaney is to be opened in a month, and the result of it will be, that the Dublin mails will be accelerated an hour and a half.

An Engineer's Prescription.—When the last Conway tube was being raised, the following colloquy took place between Mr. Stephenson and another eminent and distinguished engineer:—Mr. Stephenson: Hallo! what is the matter with you, Mr. ——? you seem out of sorts.—Mr.——: I am a martyr to a periodical nervous headache, and must go up to town to be cupped.—Mr. Stephenson: Cupped! pooh! pooh! nonsense! lessen the supplies—eat less at meals: it is always better to damp the fire than blow off steam.—*Carnarvon Her.*

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